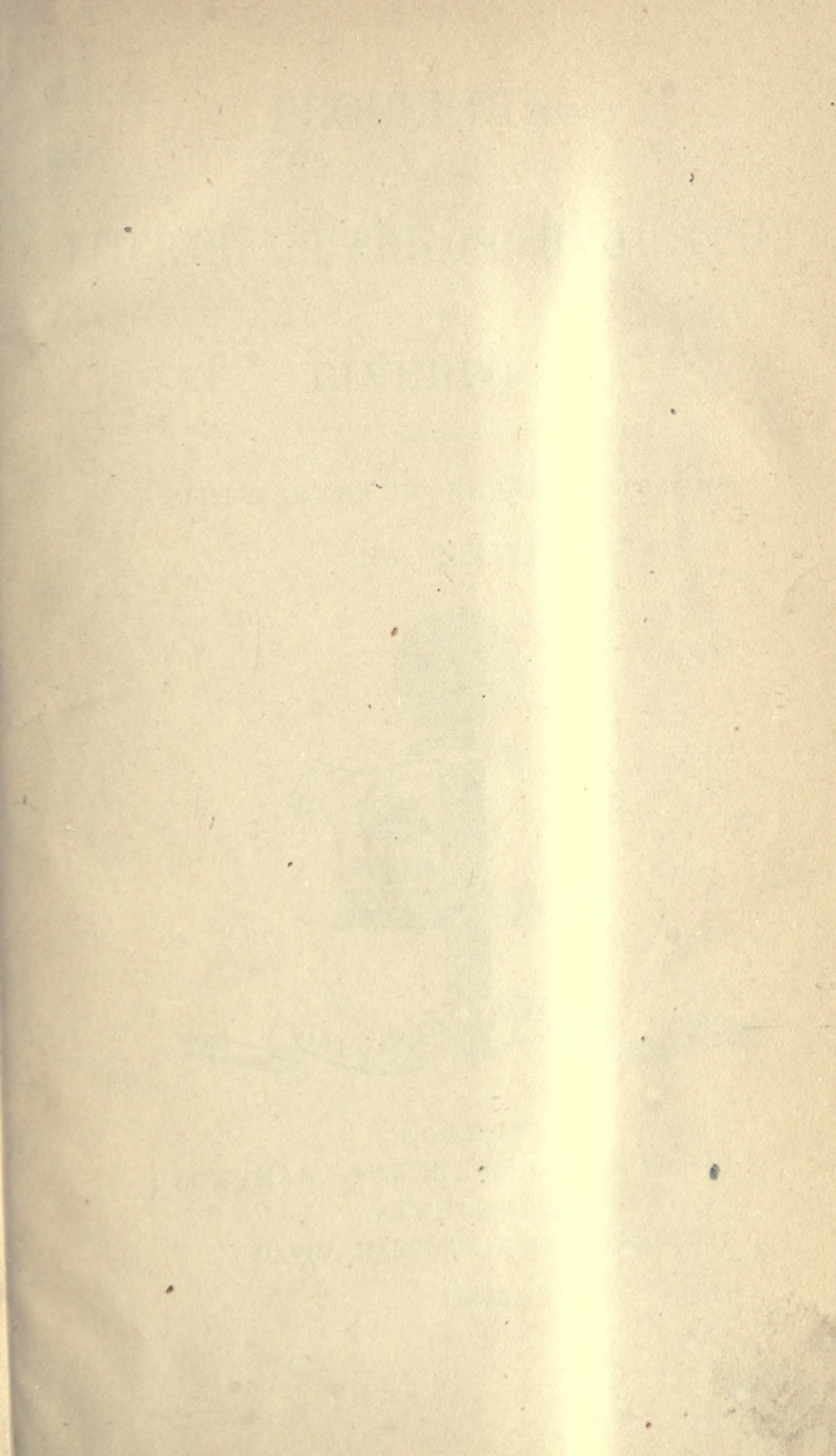
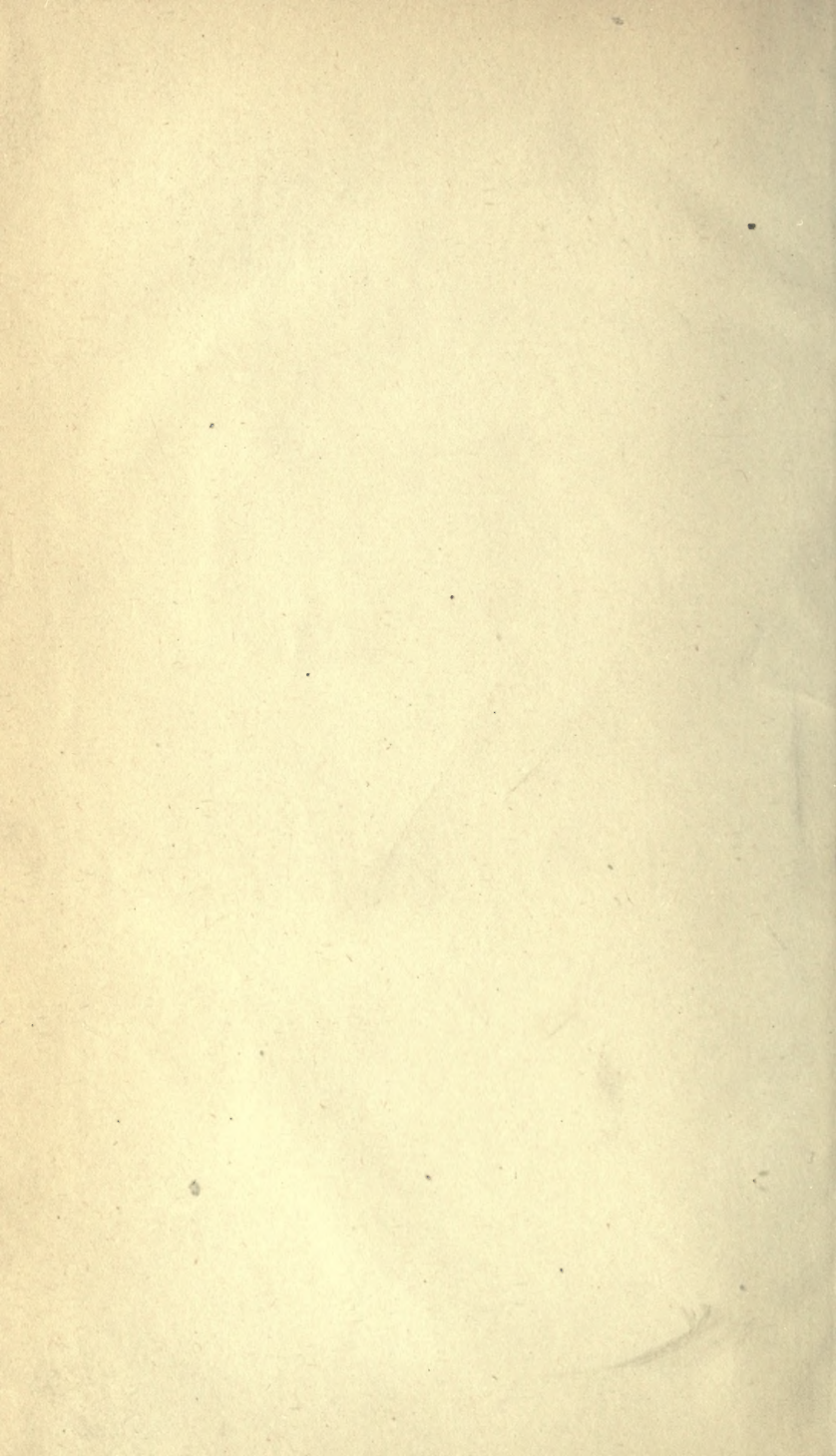


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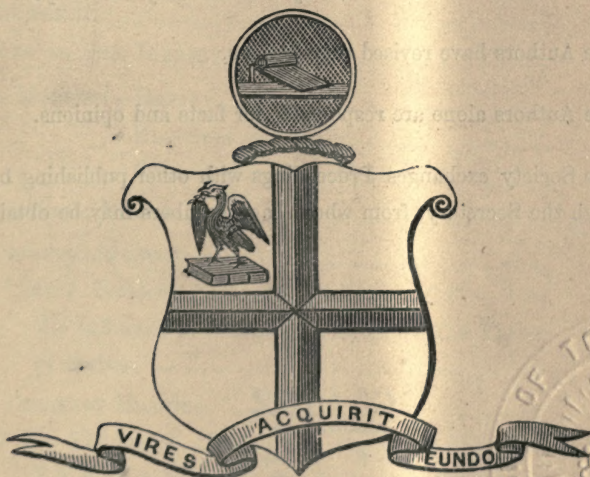
OF

LIVERPOOL,

DURING THE

FIFTY-SEVENTH SESSION, 1868-69. -70

No. XXIII. 24



LONDON:

LONGMAN, GREEN, READER, & DYER.

LIVERPOOL:

DAVID MARPLES, LORD STREET.

1869. - 1870

This Volume has been edited by the Honorary Secretary.

The Authors have revised their Papers.

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ON THE SOCIETY'S ROLL AT THE CLOSE OF THE 58TH SESSION.

Those marked † are Original Members of the Society.

Life Members are marked with an Asterisk.

Oct. 11, 1833 Aiken, James, 2, Drury-lane, and 4, Gambier-terrace.

Nov. 4, 1867 Allen, Jno. Fenwick, Windleshaw, St. Helens.

March 7, 1864 Archer, F., jun., B.A. Trin. Coll., Cantab., 8, Brunswick-street.

- *Nov. 28, 1853 Archer, T. C., F.R.S.E., F.R.S.S.A., Director of the Industrial Museum, Scotland, *Edinburgh*.
- Dec. 14, 1863 Ashe, Theop. Fielding, *Atherton-street*, and 4, *Dingle-lane*.
- Feb. 22, 1855 Avison, Thomas, F.S.A., 18, *Cook-street*, and *Fulwood Park, Aigburth*.
- Jan. 11, 1864 Bagshaw, John, 87, *Church-street*, and *Canning-terrace*, 201, *Upper Parliament-street*.
- May 1, 1854 Bahr, G. W., *Old Church Buildings, Castle-street*, and 2, *South-hill Grove, Aigburth*.
- May 4, 1863 Bailey, Fras. J., M.R.C.S., 51, *Grove-street*.
- Oct. 29, 1860 Banister, Rev. W., B.A., *St. James's Mount*.
- Jan. 13, 1862 Baruchson, Arnold, *Batavia Buildings, Hackins Hey*, and *Blundell-sands, Great Crosby*.
- March 9, 1857 Bell, Christopher, *Moor-street*, and 60, *Bridge-street, Birkenhead*.
- Dec. 10, 1866 Benas, Baron Louis, Banker, 5, *South Castle-street*.
- Nov. 14, 1864 Bennett, J. M., *St. George's-place, Lime-street*, and 109, *Shaw-street*.
- Feb. 6, 1854 Bennett, William, *St. George's-place, Lime-street*, and *Lancaster*.
- Oct. 31, 1859 Birch, Jas., 13, *The Temple, Dale-street*.
- Jan. 25, 1864 Birchall, James, Governor of the Liverpool *Industrial Schools, Kirkdale*, HON. SECRETARY.
- April 15, 1861 Blake, James, 63, *Kitchen-street*, and 45, *Canning-street*.
- March 9, 1866 Blood, William, *Chamber of Commerce*.
- Nov. 26, 1866 Boulton, Jos., 15, *Exchange Buildings*.
- *Mar. 6, 1835 Boulton, Swinton, 1, *Dale-street*, and 3, *Bedford-street, South*.
- Oct. 19, 1868 Bower, Anthony, *Vauxhall Foundry*, and *Bowersdale, Seaforth*.
- Nov. 27, 1865 Biggs, Arthur Worthington, *Brown's Buildings*, and 76, *Upper Huskisson-st.* (I. Cooke and Sons.)
- Nov. 18, 1867 Biggs, Russell H. W.; Messrs Duncan, Squarey & Co., Solicitors, *Water-street*.
- Nov. 4, 1867 Bramwell, Ed., *Cowley Hill, St. Helens*.

- Oct. 21, 1844 Bright, Samuel, 1, *North John-street*, and *Sandheys, Mill-lane, West Derby*.
- *Jan. 8, 1855 Brockholes, James Fitzherbert, *Puddington Old Hall, near Neston*.
- Oct. 31, 1864 Bromham, William, 57, *South John-street*, and 8, *Montpellier-terrace, Upper Parliament-street*.
- Oct. 29, 1866 Brown, Rev. H. Stowell, *Windsor-terrace, 274, Upper Parliament-street*.
- Nov. 12, 1866 Browne, Edgar A., 83, *Everton-road*.
- April 21, 1862 Bulley, Samuel, *Borough Buildings*, and *East Lodge, Prince's Park*.
- Feb. 4, 1867 Burden, Edward, 79, *Upper Parliament-street*.
- April 18, 1864 Burne, Joseph, *Royal Insurance Office, 1, North John-street*, and *Higher Tranmere*.
- Nov. 12, 1866 Butler, Rev. G., M.A. Oxon, *The College, Liverpool*.
- *May 1, 1848 Byerley, Isaac, F.L.S., F.R.C.S., *Victoria-road, Seacombe*.
- Jan. 25, 1869 Cape, John, Norfolk, Cape & Co., 22, *North John-street*.
- Feb. 23, 1863 Callon, W. J., M.D., 125, *Islington*.
- Nov. 3, 1862 Cameron, John, M.D., M.R.C.P., Physician to the Southern Hospital, and Lecturer on Medicine at the Royal Infirmary Sch. of Med., 17, *Rodney-st.*
- Feb. 22, 1869 Campbell, David, 187, *Grove-street*.
- Jan. 9, 1865 Cariss, Astrup, *Cook-street*, and 6, *Hope-place*.
- April 7, 1862 Cawkitt, James M., *Underwriters' Room, Exchange*, and 23, *Queen's-road, Everton*.
- Dec. 2, 1861 Chadburn, William, 71, *Lord-street*.
- Dec. 1, 1851 Clare, John Leigh, 11, *Exchange-buildings*, and *The Old Hall, Aigburth-road*.
- Oct. 31, 1859 Clark, Charles, 17, *North John-street*, and *Linden Cottage, Rock Ferry*.
- Jan. 26, 1857 Clay, William, *Exchange Buildings*, and 4, *Park-hill-road*.
- Dec. 2, 1866 Clay, Rev. Walter Lowe, *Parsonage, Rainhill*.
- Jan. 26, 1863 Commins, Andrew, LL.D. Dub., *Clarendon-chambers, 1, South John-street*.

- Oct. 6, 1862 Crosfield, Wm., jun., 9, *Temple-ct.*, and *Alexandra-drive, Ullett Road.*
- Nov. 26, 1866 Curtis, Rev. F. H., M.A. Oxon, *The College, Shaw-street.*
- Feb. 8, 1864 Cuthbert, J. R., 40, *Chapel-street*, and 40, *Huskisson-street.*
- Dec. 14, 1868 Daley, Denis. Daley & Sons, 28, *Brunswick-st.*
- Nov. 2, 1868 Dawbarn, William, *The Temple, Dale-street*, and *Mosley-hill.*
- Oct. 1, 1866 Dawson, Thomas, *Rodney-street.*
- Nov. 12, 1866 Davies, E., F.C.S., *The Laboratory, Royal Institution, Colquitt-street.*
- Oct. 21, 1867 Dixon, Wm. Henry, 44, *The Albany*, and *Thornton Lodge, Hooton, Cheshire.*
- March 9, 1868 Dixon, W., *Seacombe.*
- Nov. 27, 1863 Dove, Jno. M., *Royal Insurance Office*, and *Claughton.*
- Jan. 23, 1848 Drysdale, John James, M.D. Edin., M.R.C.S. Edin., 36, *Rodney-street.*
- Oct. 5, 1863 Drysdale, W. G., 3, *Church-street, Egremont*, and 14, *East side Queen's Dock.*
- Feb. 4, 1856 Duckworth, Henry, F.L.S., F.R.G.S., F.G.S., 5, *Cook-street*, and 2, *Gambier-terrace.*
- *Nov. 27, 1848 Edwards, John Baker, Ph.D. Gies., F.C.S., Messrs. Evans, Mercer & Co., 265, *Notre Dame-street, Montreal.*
- Oct. 29, 1866 Elliot, Adam, *Ashlea, Aigburth-road.*
- Feb. 24, 1868 Elliot, John, 35, *Peter's-Lane.*
- March 10, 1862 Ellison, Christopher O., *Adelphi-chambers. South-John-street*, and *Esplanade, Waterloo,*
- April 7, 1862 English, Charles J., 26, *Chapel-street*, and 26, *Falkner-square.*
- April 30, 1860 Fabert, John Otto William, 1, *Parliament-street*, and 3, *St. James' Mount.*
- Feb. 18, 1866 Fairclough, Rev. R. J., M.A. Cantab., 44, *Irvine-street, Edge-hill.*
- *Dec. 13, 1852 Ferguson, William, F.L.S., F.G.S., *Oriel-chambers*, and 2, *St. Aidan's-terrace, Birkenhead,*

- Feb. 9, 1863 Finlay, William, Senior Mathematical Master, Middle School, *Liverpool College*, and 49, *Everton-road*.
- Oct. 1, 1866 Fletcher, Alfred E., F.C.S., H.M. Inspector of Alkali Works for the Western District; 21, *Overton-street, Edge-hill*.
- Nov. 26, 1866 Flück, Christian, 1, *Montpellier-terrace, Upper Parliament-street*, LIBRARIAN.
- *Mar. 19, 1855 Foard, James Thomas, 5, *Essex-ct., Temple, E.C.*
- *Feb. 6, 1854 Gee, Robert, M.D. Heidelb., M.R.C.P., Lecturer on Diseases of Children, Royal Infirmary School of Med.; Physician, Workhouse Hospital; 5, *Abercromby-square*.
- March 4, 1861 Ginsburg, Rev. Christian D., LL.D. Glas., *Brook-lea, Aigburth-road*, PRESIDENT.
- Feb. 20, 1865 Gordon, Rev. A., M.A. 49, *Upper Parliament-street*.
- Dec. 2, 1861 Graves, Samuel R., M.P., *Baltic-buildings*, and *The Grange, Wavertree*.
- Nov. 14, 1853 Greenwood, Henry, 32, *Castle-street*, and *Falkner-square*.
- Jan. 22, 1855 Hakes, James, M.R.C.S., Surgeon to the Northern Hospital, *Hope-street*.
- Nov. 12, 1867 Halhead, W. B., 7, *Parkfield, Prince's Park*.
- Feb. 23, 1863 Hall, Charlton R., 17, *Dale-street*, and 111, *Shaw-street*.
- Dec. 16, 1866 Hall, Hugh Fergie, Messrs. Charlton R. Hall & Co., *Dale-street*.
- Feb. 18, 1867 Hallet, —, M.D., S.S. "City of New York." (Inman Line.)
- *Jan. 21, 1856 Hardman, Lawrence, 35, *Rock Park, Rock Ferry*.
- Feb. 6, 1865 Hassan, Rev. E., *Alma-terrace, Sandown-lane*.
- Nov. 18, 1865 Hayward, John Williams, M.D., 117, *Grove-street*.
- Feb. 6, 1865 Hebson, Douglas, 13, *Tower-chambers*, and 58, *Bedford-street South*.
- March 6, 1865 Hey, John, M.R.C.S., 23, *Shaw-street*.
- Mar. 22, 1869 Higgin, Thomas, 33, *Tower-buildings*.
- Dec. 28, 1846 Higgins, Rev. H. H., M.A. Cantab, F.C.P.S., *Rainhill*, VICE PRESIDENT.

- *Oct. 31, 1836 Higginson, Alfred, M.R.C.S., Surgeon, Southern Hospital, 44, *Upper Parliament-street*.
- Nov. 16, 1863 Holden, Adam, 48, *Church-street*, and 6, *Carlton-terrace, Milton-road*.
- Nov. 13, 1854 Holland, Charles, 70, *Tower-buildings South*, and *Liscard-vale, New Brighton*.
- March 9, 1868 Holme, James, jun., 109, *Mount Pleasant*.
- *Dec. 14, 1862 Holt, Robert Durning, 6, *India-buildings*, and 2, *Rake-lane*.
- Mar. 22, 1847 Horner, Henry P., *Cook-street*, and 5, *Devonshire-road, Prince's Park*.
- Feb. 24, 1868 Hughes, Lewis, 1, *Fenwick-court, Fenwick-street*.
- *Nov. 13, 1854 Hunter, John, Member Hist. Society, Pennsylvania, *Halifax, Nova Scotia*.
- Jan. 26, 1857 Hutton, David, 3, *St. George's-crescent*, and 61, *Canning-street*.
- *April 29, 1850 Ihne, William, Ph. D. Bonn., *Villa Felseck, Heidelberg*.
- Feb. 23, 1857 Imlach, Henry, M.D. Edin., 1, *Abercromby-square*.
- Nov. 14, 1864 Imlach, Henry, jun., 1, *Abercromby-square*.
- *Oct. 21, 1844 Inman, Thomas, M.D. Lond., M.R.C.P., Physician Royal Infirmary, 12, *Rodney-street*, and *Spital, Cheshire*.
- Nov. 28, 1864 Jeffery, F. J., *Compton House*, and *Woolton Hall, Woolton*.
- Feb. 8, 1869 Jeffery, J. R., *Compton House*, and *Woolton Hall, Woolton*.
- Mar. 10, 1862 Johnson, Richard, *Queen Insurance Buildings*, and *Brookfield House, Seaforth*.
- Jan. 26, 1863 Johnson, Richard, jun., *Queen Insurance-buildings*.
- *April 4, 1852 Jones, Morris Charles, *Queen Insurance-buildings*, and 75, *Shaw-street*.
- May 5, 1851 Jones, Roger Lyon, *Liverpool and London-chambers, Exchange*, and 6, *Sunnyside, Prince's Park*.
- April 2, 1866 Jones, Rev. J. S., 3, *Clare-street*.
- Nov. 26, 1866 Jones, Edward, B.A., 1, *May-street*, Head Master of Hibernian School.
- Feb. 24, 1868 Jones, Charles W.

- Oct. 2, 1865 Kendal, Robinson, 5, *Canning-street*.
- Jan. 10, 1848 Lamport, William James, 21, *Water-street*, and 5, *Beech-terrace, Beech-street, Fairfield*.
- *Jan. 14, 1839 Lassell, William, F.R.SS. L. and E., F.R.A.S., 27, *Milton-street*; 58, *Wapping*.
- April 27, 1862 Lassell, William, jun., 27, *Milton-street*, and *Tuebrook*.
- Oct. 21, 1844 Lear, John, 14, *Cook-street*, and 22, *Holland-terrace, Duke-street, Edge-hill*.
- Dec. 10, 1860 Leyland, Joseph, *Williamson-square*.
- May 4, 1863 Lister, James, *Union Bank*, 6, *Brunswick-street*, and *Greenbank*, 166, *Breckfield-road North*.
- Nov. 2, 1868 Lloyd, James, Vice-Consul, Argentine Confederation, 150, *Chatham-street*.
- *Oct. 21, 1844 M'Andrew, Robert, F.R.S., F.L.S., *Isleworth House, Isleworth, London*.
- April 17, 1865 MacCheane, Wm., M.R.C.S., 69, *Shaw-street*.
- March 9, 1857 MacFie, Robert Andrew, 30, *Moorfields*, and *Ashfield Hall, Neston, Cheshire*.
- April 2, 1866 McMullen, Rev. James A., M.A., 45, *Oxford-street*.
- April 20, 1863 Marples, David, 50B, *Lord-street*, and 33, *Euston-grove, Cloughton*.
- Feb. 24, 1868 Marsh, Jno., *Rann Lee, Rainhill*.
- Jan. 21, 1839 Martin, Studley, 30, *Exchange*, and 109, *Bedford-street South*.
- Oct. 21, 1867 Muspratt, E. K., *New Hall*, 41, *Old Hall-street*, and *Seaforth Hall, Seaforth*.
- Feb. 5, 1844 Mayer, Joseph, F.S.A., F.R.A.S., F.E.S., 68, *Lord-st.*, and *Pennant's House, Lower Bebington*.
- Feb. 18, 1867 Maye, Rev. H. S., B.A., Lond., *The College, Liverpool*; 68, *Everton Road*.
- April 1, 1861 Melly, George, 11, *Rumford-street*, and 90, *Chatham-street*.
- Oct. 31, 1859 Moore, Thomas John, Corr. Mem. Z.S., Curator Free Public Museum, *William Brown-street*.
- Nov. 10, 1866 Moore, Rev. W. Kennedy, M.A., 115, *Canning-st.*
- Jan. 8, 1855 Morton, George Highfield, F.G.S., 9, *London-road*.
- April 16, 1849 Moss, Rev. John James, B.A., *Upton, Cheshire*.

- Oct. 29, 1850 Mott, Albert Julius, *Church-street*, and *Sandfield, Waterloo*, HON. TREASURER.
- April 3, 1854 Mott, Charles Grey, 27, *Argyle-street*, *Birkenhead*, and *Cavendish Road*, *Birkenhead Park*.
- Nov. 27, 1865 Mountfield, William, 48, *Park-place*.
- Nov. 2, 1868 Moore, J. Murray, M.D. Edin., 6, *Oxford-street*.
- Nov. 2, 1868 M'Coskry, W., Messrs. Kidd & M'Coskry, *Leather-lane*.
- Oct. 20, 1856 Nevins, John Birkbeck, M.D. Lond., M.R.C.S., Lect. on *Materia Medica*, Royal Infirmary School of Medicine, 3, *Abercromby-sq.*, VICE PRESIDENT.
- April 7, 1862 Newlands, A., 5, *Brown's-buildings*, and 19, *Peel-terrace*, *Upper Canning-street*.
- Feb. 6, 1865 Newton, John, M.R.C.S., 13, *West Derby-street*.
- *Nov. 29, 1847 Nisbet, William, F.L.P.S.G., *Church-st.*, *Egremont*.
- *Oct. 15, 1855 North, Alfred, 20, *York Crescent*, *Clifton*.
- Nov. 18, 1861 Nugent, Rev. James, *Crosby*.
- Nov. 2, 1868 Norrie, Rev. B. A. W., *Rainhill*.
- Dec. 10, 1866 Owen, Peter, Messrs. Farnworth & Jardine, *Liverpool* and *London Chambers*.
- Nov. 4, 1861 Philip, Thomas D., 49, *South Castle-street*, and 47, *Prospect-vale*, *Fairfield*.
- Dec. 28, 1846 Pieton, James Allanson, F.S.A., Chairman of the Library and Museum Committee, 11, *Dale-st.*, and *Sandy-knowe*, *Wavertree*, VICE PRESIDENT.
- April 30, 1866 Praag, Rev. James, 29, *Mount-street*.
- March 8, 1869 Parratt, Thos. P., 3, *Belvidere-road*, *Prince's-park*.
- *Jan. 22, 1866 Raffles, William Winter, 54, *Brown's-buildings*, and *Sunnyside*, *Prince's Park*.
- April 7, 1862 Rankin, Robert, Chairman of the Dock Board, 55, *South John-street*, and *Brombro' Hall*, *Cheshire*.
- Nov. 12, 1860 Rathbone, Philip H., 4, *Water-street*, and *Green-bank-cottage*, *Wavertree*.
- Mar. 24, 1862 Rathbone, Richard Reynolds, 11, *Rumford-street*, and *Laurel Bank*, *St. Michael's-road*.
- *Jan. 7, 1856 Rawlins, Charles Edward, jun., 7, *Chapel Walks*, and 1, *Windermere-terrace*, *Prince's Park*.
- *Nov. 17, 1851 Redish, Joseph Carter, 6, *Dingle-lane*.
- Dec. 10, 1866 Roberts, Rev. R. H., B.A., *Litherland-road*, *Bootle*.

- Feb. 4, 1867 Robinson, Jos. F., 5, *Bagot-street, Wavertree.*
- Feb. 9, 1863 Ronald, Lionel K., 19, *Dale-st., and Broad Green.*
- April 18, 1854 Rowe, James, 16, *South Castle-street, and 105, Shaw-street.*
- Feb. 20, 1865 Samuel, Albert H., Messrs. Evans, Son, & Co., *Wood-street, and Canning-terrace, Upper Parliament-street.*
- April 7, 1862 Samuel, Harry S., 11, *Orange-court, and 2, Canning-street.*
- Nov. 13, 1864 Samuelson, Edward, 54, *Hanover-st., and Huyton.*
- Jan. 11, 1864 Samuelson, James, 18, *Dale-street, and Worsley Villa, St. Domingo Grove.*
- Mar. 19, 1866 Sephton, Rev. John, M.A., *Liverpool Institute.*
- Nov. 16, 1863 Sheldon, E. M., M.R.C.S., 223, *Boundary-street.*
- Oct. 29, 1866 Shimmin, Hugh, 56, *Cable-street, and Tue-brook, West Derby.*
- Nov. 2, 1868 Sharp, Charles, *Liverpool Institute.*
- Nov. 2, 1863 Skillicorn, John E., *Whitley-ter., 206, Walton-rd.*
- Nov. 7, 1864 Skinner, Thomas, M.D. Edin., 1, *St. James's-road.*
- *April 21, 1862 Smith, James, *Barkeley House, Seaforth, and 7, Water-street.*
- †Mar. 13, 1812 Smith, James Houlbroke, 28, *Rodney-street, and Greenhill, Allerton.*
- Feb. 23, 1863 Smith, J. Simm, *Royal Insurance Office, North John-street.*
- Dec. 10, 1866 Smith, Elisha, Messrs. Henry Nash & Co., 5, *India-buildings.*
- Feb. 24, 1862 Snape, Joseph, Lecturer on Dental Surgery, Royal Infirmary School of Medicine, 75, *Rodney-st.*
- Nov. 12, 1860 Spence, Charles, 4, *Oldhall-street.*
- Feb. 10, 1862 Spence, James, 6, *Dodd's-buildings, Chapel-street, and 10, Abercromby-square.*
- Nov. 27, 1865 Spola, Luigi, LL.D., 1, *Lully-street, Grove-street.*
- Jan. 13, 1868 Stearn, C. H., 3, *Eldon-terrace, Rock Ferry.*
- Dec. 14, 1857 Steele, Robert Topham, 4, *Water-street, and Wavertree.*
- Jan. 9, 1865 Stewart, Robert E., L.D.S., R.C.S., Dental Surgeon, Southern Hospital, and Liverpool Dental Hospital, 37, *Rodney-street.*

- Oct. 18, 1858 Stuart, Richard, 10, *Exchange-street East*, and *Brooklyn Villa, Breeze-hill, Walton*.
- *Feb. 19, 1855 Taylor, John Stopford, M.D. Aberd., F.R.G.S., 1, *Springfield, St. Anne-street*.
- Jan. 23, 1843 Taylor, Robert Hibbert, M.D. Edin., L.R.C.S. Ed., Lect. on Ophthalmic Medicine, Royal Infirmary School of Medicine, 1, *Percy-street*.
- Dec. 11, 1854 Thompson, Samuel H., *Thingwall Hall, Knotty Ash*.
- Nov. 17, 1850 Tinling, Chas., 44, *Cable-street*, and 34, *Onslow-road, Elm Park*.
- Feb. 22, 1869 Tinker, Geo., *Blue Coat Hospital*.
- Dec. 1, 1851 Towson, John Thomas, F.R.G.S., Scientific Examiner, Sailors' Home, 47, *Upper Parliament-street*.
- Jan. 7, 1867 Trimble, Robt., *Riversdale-road, Aigburth*.
- *Feb. 19, 1844 Turnbull, James Muter, M.D. Edin., M.R.C.P., Physician Royal Infirmary, 86, *Rodney-street*.
- Oct. 21, 1861 Unwin, William Andrew, 11, *Rumford-place*.
- Oct. 21, 1844 Vose, James Richard White, M.D. Edin., F.R.C.P., Physician Royal Infirmary, 5, *Gambier-terrace*.
- Mar. 18, 1861 Walker, Thomas Shadford, M.R.C.S., *Rodney-street*.
- Jan. 27, 1862 Walmsley, Gilbert G., 50, *Lord-street*.
- Jan. 9, 1865 Walthew, William, *Phoenix-chambers*, and *Vine Cottage, Aughton*.
- Dec. 2, 1861 Weightman, William Henry, *Leith Offices, Moorfields*, and *Hapsford-lane, Litherland*.
- April 7, 1862 Whittle, Ewing, M.D., Lecturer on Med. Jurisprudence, Royal Inf. School of Medicine, 65, *Catherine-street*.
- Nov. 2, 1863 Whitty, W. Alfred, "*Daily Post*" Office, and 43, *Shaw-street*.
- Jan. 13, 1868 Whitworth, Rev. W. A., B.A., 16, *Percy-street*, and *Queen's College, Liverpool*.
- Mar 18, 1861 Wood, Geo. S., 20, *Lord-street*, and *Bellevue-road, Wavertree*.

HONORARY MEMBERS,

LIMITED TO FIFTY.

- 1.—1812 Peter Mark Roget, M.D. Edin., F.R.C.P., F.R.S., F.G.S.,
F.R.A.S., F.R.G.S., &c., 18, *Upper Bedford-
place, London.*
- 2.—1819 John Stanley, M.D. Edin., *Whitehaven.*
- 3.—1827 Rev. William Hincks, F.R.S.E., F.L.S., Professor of
Natural History in University College,
Toronto, C.W.
- 4.—1833 The Right Hon. Dudley Ryder, Earl of Harrowby, K.G.,
D.C.L., F.R.S., *Sandon-hall, Staffordshire,*
and 39, *Grosvenor-square, London, W.*
- 5.—1833 James Yates, M.A., F.R.S., F.L.S., F.G.S., &c., *Lau-
derdale House, Highgate, London.*
- 6.—1835 George Patten, A.R.A., 21, *Queen's-road West, Regent's
Park, London.*
- 7.—1835 William Ewart, M.P., *Cambridge-square, Hyde-park,
London.*
- 8.—1836 The Most Noble William, Duke of Devonshire, K.G.,
M.A., F.R.S., F.G.S., &c., Chancellor of the
University of Cambridge, *Devonshire House,*
London W., and Chatsworth, Derbyshire.
- 9.—1838 George Biddell Airy, M.A., D.C.L., F.R.S., Hon.
F.R.S.E., Hon. M.R.I.A., V.P.R.A.S.,
F.C.P.S., &c., Astronomer Royal, *Royal
Observatory, Greenwich.*
- 10.—1840 James Nasmyth, F.R.A.S., *Penshurst, Kent.*
- 11.—1840 Richard Duncan Mackintosh, L.R.C.P., *Exeter.*
- 12.—1841 Charles Bryce, M.D. Glasg., Fell.F.P.S.G., *Brighton.*
- 13.—1844 T. P. Hall, *Coggleshall, Essex.*
- 14.—1844 Peter Rylands, *Warrington.*

- 15.—1844 John Scouler, M.D., LL.D., F.L.S., *Glasgow*.
- 16.—1844 Thomas Rymer Jones, F.R.S., F.Z.S., F.L.S., Professor of Comparative Anatomy, *King's College, London*.
- 17.—1844 Robert Patterson, F.R.S., M.R.I.A., *Belfast*.
- 18.—1854 Sir Charles Lemon, Bart., M.A. Cantab., F.R.S., F.G.S., *Penrhyn, Cornwall*.
- 19.—1844 William Carpenter, M.D. Edin., F.R.S., F.L.S., F.G.S., Registrar, *London University*.
- 20.—1848 Rev. Thomas Corser, M.A., *Strand, Bury*.
- 21.—1850 Rev. St. Vincent Beechy, M.A. Cantab., *Worsley, near Eccles*.
- 22.—1851 James Smith, F.R.S.S.L. and E., F.G.S., F.R.G.S., *Jordan-hill, Glasgow*.
- 23.—1851 Henry Clarke Pidgeon, *London*.
- 24.—1851 Rev. Robert Bickersteth Mayor, M.A., Fell. St. John's College, Cantab., F.C.P.S., *Rugby*.
- 25.—1852 William Reynolds, M.D., *Coed-du, Denbighshire*.
- 26.—1853 Rev. James Booth, LL.D., F.R.S., &c., *Stone, near Aylesbury*.
- 27.—1857 Thomas Jos. Hutchinson, F.R.G.S., F.R.S.L., F.E.S., H.B.M. Consul, *Rosario*.
- 28.—1861 Louis Agassiz, Professor of Natural History in Harvard University, *Cambridge, Massachusetts*.
- 29.—1861 William Fairbairn, LL.D., C.E., F.R.S., *Polygon, near Manchester*.
- 30.—1861 Rev. Thomas P. Kirkman, M.A., F.R.S., *Croft Rectory, Warrington*.
- 31.—1862 The Right Rev. H. N. Staley, D.D., Bishop of Honolulu, *Sandwich Islands*.
- 32.—1863 Edward J. Reed, Chief Constructor of H. M. Navy, Admiralty, and *Hyde Vale, 3, Greenwich, S. E.*
- 33.—1865 John Edward Gray, Ph. D., F. R. S., &c., *British Museum*.
- 34.—1865 George Rolleston, M.D., F.R.S., Linacre Professor of Physiology in the University of Oxford, *Oxford*.
- 35.—1865 Cuthbert Collingwood, M.A. and M.B. Oxon, F.L.S.

- 36.—1867 J. W. Dawson, LL.D., F.R.S., F.G.S., &c., Principal and Vice-Chancellor of McGill University, *Montreal*.
- 37.—1868 Captain Sir James Anderson, *Atlantic Telegraph Company, London*.
- 38.—1869 Charles Dickens, *London*.

CORRESPONDING MEMBERS.

LIMITED TO THIRTY-FIVE.

- 1.—1867 Albert C. L. G. Günther, M.A., M.D., Ph.D., British Museum, Editor of the "Zoological Record."
- 2.—1867 J. Yate Johnson, *London*.
- 3.—1867 R. B. N. Walker, *Gaboon, West Africa*.
- 4.—1868 Rev. J. Holding, M.A., F.R.G.S., *London*.
- 5.—1868 Geo. Hawkins, *Colombo, Ceylon*.
- 6.—1868 J. Lewis Ingram, *Bathurst, River Gambia*.
- 7.—1869 Geo. Mackenzie, *Cebu, Philippine Islands*.

ASSOCIATES.

LIMITED TO TWENTY-FIVE.

- 1.—Jan. 27, 1862 Captain John H. Mortimer, "America," (Atlantic.)
- 2.—Mar. 24, 1862 Captain P. C. Petrie, "City of London," Commodore of the Inman Line of American Steam Packets. (Atlantic.)
- 3.—Feb. 9, 1863 Captain James P. Anderson, R.M.S.S. "Africa," Cunard Service. (Atlantic.)
- 4.—Feb. 9, 1863 Captain John Carr, (Bushby and Edwards,) ship "Scindia." (Calcutta.)

- 5.—Feb. 9, 1863 Captain Charles E. Price, R.N.R., (L. Young and Co.,) ship "Cornwallis. (Calcutta and Sydney.)
- 6.—April 20, 1863 Captain Fred. E. Baker, ship "Niphon." (Chinese Seas.)
- 7.—Oct. 31, 1864 Captain Thompson, ship "Admiral Lyons." (Bombay.)
- 8.—Oct. 31, 1863 Captain Edward Berry, ship "Richard Cobden." (Chili.)
- 9.—Oct. 31, 1864 Captain Alexander Browne, (Papayanni,) S. S. "Agia Sofia." (Mediterranean.)
- 10.—Oct. 31, 1864 Captain Whiteway, ship "Annie Chesshyre." (Pacific.)
- 11.—April 13, 1865 Captain Alexander Cameron, (Boult, English, and Brandon,) ship "Staffordshire." (Shanghai.)
- 12.—Dec. 11, 1865 Captain Walker, ship "Trenton."
- 13.—Mar. 23, 1868 Captain David Scott.
- 14.—Oct. 5, 1868 Captain Cawne Warren.
- 15.—Oct. 5, 1868 Captain Perry.
- 16.—Mar. 22, 1869 Captain Robert Morgan, ship "Robin Hood."

TREASURER'S ACCOUNT, 1867-68.

Dr. *The Literary and Philosophical Society, in Account with ISAAC BYERLEY, Treasurer, to October, 1868.* **Cr.**

	£	s.	d.
To paid Mr. Marples, balance of account for Printing	101	17	1
Mr. Tinsling, for Printing and Stationery	8	9	0
Secretary's Expenses of Management	20	4	0
Council's Grant to Delegates to the British Association	15	0	0
Mrs. Johnson's Account for Tea, Coffee, &c.	19	3	2
Collector's Commission	6	16	0
Waiters' Attendance	1	17	6
Timepiece for Meeting Room	1	19	6
	175	6	3

Balance carried down	308	17	6
	£484	3	9

Errors excepted.

Audited and found correct, { EDWARD DAVIES.
 { GEORGE H. MORTON.

	£	s.	d.
By Balance from last Account—			
Dock Bonds.....	£250	0	0
In Treasurer's hands	75	14	3
	325	14	3
Annual Subscriptions.....	139	2	6
Entrance Fees	7	7	0
Interest upon Dock Bonds.....	12	0	0

£484 3 9

Dock Bonds.....	£250	0	0
In Treasurer's hands.....	58	17	6
	£308	17	6

ADDITIONS TO THE LIBRARY,

RECEIVED FROM MAY, 1868, TO MAY, 1869.

	Title.	Donor.
1868,		
OCTOBER 19th.		
Journal of the Society of Arts, nos. 805-830 inclusive		<i>The Society.</i>
Journal of the Franklin Institute, Feb.-Aug., 1868, inclusive		<i>The Institute.</i>
Proceedings of the Zoological Society, Index 1848-60, Part I. Jan.-March, Part III. May-Dec., 1867		<i>The Society.</i>
Report of the British Association for the advancement of Science, 1867		<i>Dr. Inman.</i>
Proceeding of the Society of Antiquaries, vol. 3, second series, nos. 1-7, vol. 4, no. 1		<i>The Society.</i>
Journal of the Chemical Society, May to Oct., 1868, nos. 65-70		<i>The Society.</i>
Journal of the Linnæan Society, vol. 9, no. 40, vol. 10, nos. 41-47		<i>The Society.</i>
Proceedings of the Royal Institution of Great Britain, vol. 5, parts 3 and 4		<i>The Institution.</i>
Proceedings of the Royal Society, vol. 16., nos. 101-104		<i>The Society.</i>
Journal of the Statistical Society, June and September, vol. 31, parts 2 and 3.		<i>The Society.</i>
Anthropological Review, nos. 22 and 23		<i>The Society.</i>
Proceedings of the Royal Geographical Society, vol. 12, nos. 2, 3 and 4		<i>The Society.</i>
Journal of the Royal Geographical Society, vol. 37		<i>The Society.</i>

Title.	Donor.
Proceedings of the Meteorological Society, vol. 4, nos. 37 and 38	<i>The Society.</i>
Monthly Notices of the Royal Astronomical Society, vol. 28, nos. 6, 7 and 8	<i>The Society.</i>
Proceedings of the Royal Physical Society of Edinburgh, session 1864-5	<i>The Society.</i>
Canadian Journal of Industry, Science, and Art, no. 66	<i>The Society.</i>
Natural History Transactions of Northumberland and Durham, vol. 2	<i>The Society.</i>
Royal Cornwall Polytechnic Society, Thirty- fifth Annual Report	<i>The Society.</i>
Clinical Society's Transactions, vol. 1	<i>The Society.</i>
Journal of the Royal Asiatic Society, vol. 3, part 1	<i>The Society.</i>
Clarks' Ante-Nicene Library, Cyprian, vol. 2 . Tertullian against Marcion	<i>Mr. Macfie.</i>
Authorship of the Practical Electric Telegraph of Great Britain, by Rev. Thos. Fothergill Cooke, M.A.	<i>Author.</i>
Journal of the Scottish Meteorological Society, April, 1868	<i>The Society.</i>
Greenwich Observations, for 1866	<i>Admiralty Commissioners.</i>
Leeds Philosophical and Literary Society's Annual Report, 1867-68	<i>The Society.</i>
The Science of Counting, by Prof. Whitworth, M.A.	<i>The Author.</i>
Notes on Parts of Devon and Cornwall (Geolo- gical), by J. Beete Jukes. <i>Roy. Geog. Society of Ireland.</i>	
Buenos Ayres and Argentine Gleanings, by T. J. Hutchinson, Consul for Rosario, Santa Fe	<i>The Author.</i>
Details of a Journey through Part of the Saludo Valley, Argentine Republic, by Consul Hutchinson	<i>The Author.</i>

Title.	Donor.
On Some New Species of Oliva, by F. P. Marrat	<i>The Author.</i>
Abstract of the Proceedings of the Liverpool Geological Society, 1867-68	<i>The Society.</i>
Report of the Liverpool Naturalists Field Club, 1867-68	<i>The Society.</i>
Proceedings of the Liverpool Architectural and Archæological Society, 1867-68	<i>The Society.</i>
Proceedings of the Liverpool Philomathic Society, 1867-68	<i>The Society.</i>
Journal of the Liverpool Polytechnic Society, September, 1868	<i>The Society.</i>

NOVEMBER 2nd.

Journal of the Society of Arts, nos. 831, 832	<i>The Society.</i>
The Feudal Barons of Powys, by Morris Chas. Jones	<i>The Author.</i>
Proceedings of the Royal Geographical Society, vol. 12, no. 5	<i>The Society.</i>
Monthly Notices of the Royal Astronomical Society, vol. 28, no. 9	<i>The Society.</i>
Proceedings of the Society of Antiquaries of London, vol. 4, no. 2	<i>The Society.</i>
Liverpool Medical and Surgical Reports, vol. 2	<i>The Editors.</i>
Journal of the Franklin Institute, September 1868	<i>The Institute.</i>
Proceedings of the Liverpool Architectural and Archæological Society, 21st session, 1st meeting	<i>The Society.</i>
Journal of the Liverpool Polytechnic Society	<i>The Society.</i>
Transactions of the Liverpool Geological Society	<i>The Society.</i>
Transactions of the Liverpool Polytechnic Society	<i>The Society.</i>

	Title.	Donor.
NOVEMBER 16th.		
Journal of the Society of Arts, nos. 833, 834 .		<i>The Society.</i>
Proceedings of the Royal Society, vol. 17, no. 105		<i>The Society.</i>
Proceedings of the Liverpool Chatham Society, 24th session		<i>The Society.</i>
Journal of the Chemical Society, Nov., 1868 .		<i>The Society.</i>
Proceedings of the Zoological Society of Lon- don, 1868		<i>The Society.</i>
Annual Report of the Boston Society of Natural History, 1868-69		<i>The Society.</i>
Conditions and Doings of Ditto, 1867-68. Memoirs, vol. 1, part 3. Proceedings, vol. 11		<i>The Society.</i>
Twenty-second Annual Report of the Board of Trustees of the Public Schools of the city of Washington		<i>The Trustees.</i>
Proceedings of the American Philosophical Society, Philadelphia, vol. 10, no. 77 . . .		<i>The Society.</i>
Annals of the Lyceum of Natural History, New York, vol. 8, nos. 15, 16, 17		<i>The Lyceum.</i>
Proceedings of the American Academy of Arts and Sciences, 1866		<i>The Academy.</i>
Proceedings of the Essex Institute, (Salem, U. S.), vol. 5, nos. 5 and 6		<i>The Institute.</i>
Monthly Reports of the Department of Agricul- ture, U. S., 1867		<i>U. S. Government.</i>
Report for 1866		<i>U. S. Government.</i>
Annual Report of the Smithsonian Institution, 1866		<i>The Institution.</i>
Transactions of the Medico-Chirurgical Society.		
Smithsonian Contributions to Knowledge, vol. 15		<i>The Institution.</i>
NOVEMBER 80th.		
Medico-Chirurgical Transactions, vol. 51 .		<i>The Society.</i>
Journal of the Liverpool Polytechnic Society .		<i>The Society.</i>
Journal of the Society of Arts, nos. 835, 836 .		<i>The Society.</i>

Title.	Donor.
Sixteenth Annual Report of the Council of the City of Manchester, on the working of the Public Free Libraries, 1867-68	<i>The Council.</i>
Journal of the Franklin Institute, vol. 86, no. 514	<i>The Institute.</i>
Journal of the Linnæan Society, vol. 10, no. 46	<i>The Society.</i>

DECEMBER 14th.

Clarks' Ante-Nicene Library, vols. 9 and 10	<i>Mr. Macfie.</i>
Guide to the Geology of the Yorkshire Coast, by Martin Simpson, Whitby	<i>The Author.</i>
Monthly Notices of the Royal Astronomical Society, vol. 29, no. 1	<i>The Society.</i>
Autobiography of Right Hon. Sir Richard Cox, Bart., Lord Chancellor of Ireland, by Richard Caulfield, Cuvierian Society, Cork	<i>The Author.</i>
Life of St. Fin Barre, first Bishop of Cork, by ditto	<i>The Author.</i>
Proceedings of the Philosophical Society of Glasgow, 1867-68	<i>The Society.</i>
Journal of the Chemical Society, Dec., 1868	<i>The Society.</i>
Annual Report, Halifax Literary and Philo- sophical Society, 1868	<i>The Society.</i>
Journal of the Scottish Meteorological Society, October, 1868	<i>The Society.</i>
Journal of the Society of Arts, nos. 837, 838	<i>The Society.</i>
Proceedings of the Liverpool Architectural and Archeological Society	<i>The Society.</i>
Transactions of the Liverpool Chemists' Asso- ciation	<i>The Association.</i>

JANUARY 11th, 1869.

Patent Office Reports, Washington, U. S., 1863-64-65	<i>U. S. Government.</i>
Journal of the Society of Arts, nos. 839, 840, 841, 842	<i>The Society.</i>

Title.	Donor.
Journal of the Statistical Society of London, Dec., 1868	<i>The Society.</i>
Journal of the Franklin Institute, Nov. 1868 .	<i>The Institute.</i>
Anthropological Review, January, 1869 . . .	<i>The Society.</i>
Transactions of the Royal Scottish Society of Arts, vol. 7, parts 4 and 5	<i>The Society.</i>
Proceedings of the Liverpool Architectural and Archæological Society	<i>The Society.</i>
Proceedings of the Royal Society, vol. 17, no. 106	<i>The Society.</i>
Canadian Journal of Industry, Dec., 1868	<i>Canadian Institute.</i>

JANUARY 25th.

Journal of the Society of Arts, nos. 843, 844 .	<i>The Society.</i>
Various Papers, read before the Royal Geographical Society, by Dr. Collingwood, late Hon. Secretary to this Society	<i>The Author.</i>
Proceedings of the Meteorological Society, vol. 4, no. 39	<i>The Society.</i>
Report of the Proceedings, Geological and Polytechnic Society of the West Riding of Yorkshire	<i>The Society.</i>
Annual Report of the Transactions of the Plymouth Institution, 1867-68	<i>The Institution.</i>
Journal of the Linnean Society, January, 1869, vol. 10, nos. 45 and 48	<i>The Society.</i>
Journal of the Chemical Society, Jan., 1869 .	<i>The Society.</i>
Proceedings Royal Astronomical Society .	<i>The Society.</i>
Ditto, Liverpool Architectural and Archæological Society	<i>The Society.</i>

FEBRUARY 8th.

Canadian Naturalist and Geologist, vol. 3, nos. 1, 2, 3, 4	<i>The Natural History Society of Montreal.</i>
Journal of the Society of Arts, nos. 845, 846 .	<i>The Society.</i>
Proceedings of the Royal Society, vol. 17, no. 107	<i>The Society.</i>

	Title.	Donor.
Journal of the Liverpool Polytechnic Society, January		<i>The Society.</i>
Proceedings of the Liverpool Architectural and Archæological Society, January . . .		<i>The Society.</i>
FEBRUARY 22nd.		
Journal of the Society of Arts, nos. 847, 848 .		<i>The Society.</i>
Journal of the Franklin Institute, Dec., 1868 .		<i>The Institute.</i>
Proceedings of Royal Society, vol. 17, no. 108 .		<i>The Society.</i>
Monthly Notices of the Royal Astronomical Society, vol. 29, no. 3		<i>The Society.</i>
Journal of the Chemical Society, February, 1869		<i>The Society.</i>
Reale Istituto Lombardi di Scienza e Lettere. Rendiconti Classedi Lettere e Scienza Moralie Politiche, vol. 4, nos. 1 to 9, inclusive. Classe di Scienza Matematiche e Naturali, vol. 4, nos. 1 to 10, inclusive. Series II., vol. 1, nos. 1 to 10		<i>The Institute.</i>
Memoire del Reale Istituto Lombardo, Scienza Moralie, etc., vol. 10, nos. 4, 5, 6 . . .		<i>The Institute.</i>
Solenni Adunara del Reale Istituto Lombardo, vol. 1, no. 4		<i>The Institute.</i>
Proceedings of the Liverpool Architectural and Archæological Society		<i>The Society.</i>
MARCH 8th.		
U. S. Patent Office Reports, 1866, vols. 1, 2, 3, Washington		<i>U. S. Government.</i>
Forty-fourth Annual Report of the Directors of the Liverpool Institute, 1869		<i>The Institute.</i>
Proceedings of the Royal Geographical Society, vol. 18, no. 1		<i>The Society.</i>
Geologists 'Association Annual Report, 1868		<i>The Association.</i>
Journal of the Society of Arts, nos. 849, 850 .		<i>The Society.</i>

	Title.	Donor.
MARCH 22nd.		
	Journal of the Chemical Society, March, 1869.	<i>The Society.</i>
	Proceedings of the Royal Society, vol. 17, no. 109	<i>The Society.</i>
	Proceedings of the Meteorological Society, vol. 4, no. 40	<i>The Society.</i>
	Proceedings of the American Philosophical Society, Philadelphia, vol. 10, no. 8 .	<i>The Society.</i>
	Journal of the Society of Arts, nos. 851, 852 .	<i>The Society.</i>
	Genealogical Chart of the ex-Royal House of Bourbon, by F. J. Jeffery	<i>The Author.</i>
APRIL 5th.		
	Monthly Notices of the Royal Astronomical Society, vol. 29, no. 4	<i>The Society.</i>
	Journal of the Society of Arts, nos. 853, 854 .	<i>The Society.</i>
	Journal of the Scottish Meteorological Society, January, 1869	<i>The Society.</i>
	Proceedings of the Meteorological Society, vol. 4, no. 41	<i>The Society.</i>
	Anthropological Review, April, 1869 . . .	<i>The Society.</i>
	Transactions Edinburgh Geological Society, vol. 1, part 1	<i>The Society.</i>
	House of Austria in the Thirty Years' War, by A. W. Ward, Professor of History, Owen's Coll., Manchester	<i>The Author.</i>
	Memoires des Crinoides Vivants, par Michl. Sars. Beitrage zur Lateinischen Grammatik von L. E. M. Aubert. Ægyptische Chrono- logie, von J. Lieblin. Traite Elementaire des Fonctions Eliptiques, par Dr. O. J. Broch. Al-Muffassal Opus de re Grammatica Arabi- cum, edidit par J. P. Brock	<i>Det Kongelige Norske Universitet i Christiania (ved Universitetets Secretair).</i>
	Journal of the Liverpool Polytechnic Society, January, 1869	<i>The Society.</i>

Title.	Donor.
Proceedings of the Liverpool Architectural and Archæological Society	<i>The Society.</i>
APRIL 16th.	
Journal of the Society of Arts, nos. 855, 856 .	<i>The Society.</i>
Journal of the Franklin Institute, Jan., Feb., 1869	<i>The Institute.</i>
Proceedings of the Royal Society, vol. 17, no. 10	<i>The Society.</i>
Catalogue of the Library of the Chemical Society	<i>The Society.</i>
Journal of the Chemical Society, April, 1869 .	<i>The Society.</i>
Journal of the Linnæan Society (Botany) vol. 2, no. 49	<i>The Society.</i>
Journal of the Statistical Society, March, 1869	<i>The Society.</i>
Proceedings of the Physical Society of Edin- burgh, session 1862-63, 1865-66 .	<i>The Society.</i>
Proceedings of the Liverpool Architectural and Archæological Society	<i>The Society.</i>
Monthly Notices of the Royal Astronomical Society, vol. 29, no. 5	<i>The Society.</i>
Scientific Opinion, nos. 1 to 24 .	<i>Wyman & Sons, London.</i>

PROCEEDINGS
OF THE
LITERARY AND PHILOSOPHICAL SOCIETY.

PROCEEDINGS
OF THE
LIVERPOOL
LITERARY AND PHILOSOPHICAL SOCIETY.

ANNUAL MEETING—FIFTY-EIGHTH SESSION.

ROYAL INSTITUTION, OCTOBER 5TH, 1868.

J. BIRKBECK NEVINS, M. D., VICE-PRESIDENT,
in the Chair.

The minutes of the last meeting of the previous session having been read and signed, the HONORARY SECRETARY read the following

REPORT.

The Council of the Literary and Philosophical Society, in presenting the fifty-seventh annual report, have again to record the unabated interest which is taken in the Society's proceedings, and to congratulate the members upon the good attendances which marked the meetings of the last session.

During the year, thirty-two names have been withdrawn from the roll of ordinary members, chiefly by removals from the town, but in two instances by death. Of these, the name of the late William Rathbone will always be held in veneration by the members of this Society; he was one of its founders, and his name had been on the roll for the long period of fifty-six years. A cordial vote of condolence with his family on their bereavement was unanimously passed, in a full meeting of the members, during the late session.

The Society has to regret the loss, during the year, of perhaps the most distinguished of its honorary members, the Right Hon. Lord Brougham, whose fame is too widely known to require more in this report than a passing allusion to his death.

The Council have also to record the loss of another member, Dr. Birkenhead, who, during his short career, had laid the foundation of a high scientific reputation.*

Against the thirty-two resignations which have been mentioned, the council has to report fifteen elections, by which the list of ordinary members has been reduced from 224 to 207, a number still in excess of that of former years.

* Dr. Birkenhead was born at Sale, near Manchester, in 1837, and was educated in the national school at Stretford, where, both as a scholar and pupil teacher, he early displayed the possession of considerable ability. His education was continued at the Chester Training College, which he left, at the end of two years, to pursue his special studies at the Royal School of Mines in London, and to qualify himself as a science teacher, under the department of Science and Art. He then obtained the mastership of the Wigan Mining School, to which appointment he soon afterwards added that of Lecturer at the Liverpool School of Science, and latterly also that of Lecturer on Chemistry and Toxicology at the Royal Infirmary School of Medicine. His labours were not confined to the duties of these public appointments; he was consulted as an analyst, conducted science classes at Preston, and gave courses of popular lectures to the working classes at the Free Library and Museum. From this brief notice, it will be seen that he was a man of rare ability, industry, and perseverance, and that his premature death (which occurred on the 22nd October, 1867) has deprived Science of one of the most devoted of her sons.

The roll of honorary members remains at 39, the election of Captain Sir James Anderson making up the deficiency in numbers caused by the death of Lord Brougham; one corresponding member has been added to the three already on the list; and the number of associates continues 13, as before. The total number of members of all classes is thus 263.

The application which was made last year to the British Association, to hold its annual meeting for 1869 in Liverpool, has been renewed this year with greater earnestness, and your Council, in conjunction with many of the kindred societies in the town, sent special delegates to Norwich to support the invitation which was made. Although their efforts have not been crowned with success, your Council have very strong reasons for believing that the British Association will not pass Liverpool by in 1870, should the invitation be renewed next year.

The volume of proceedings for the last session is now in course of distribution, and although its publication has not taken place so soon as the Council would wish, they yet hope that, by special attention to this matter, and the prompt co-operation of reading members, the future volumes of proceedings will be ready for distribution during the early part of each summer.

Before concluding this report, the Council desire to express their sense of the valuable services which Mr. Thomas J. Moore has rendered to this Society, by his numerous exhibitions of natural history specimens, and the interesting information he has communicated to the members on each occasion, thus rendering the meetings of the Society additionally agreeable and instructive.

The Council have now to recommend the following five gentlemen for election on the new Council:—The Rev. W. Kennedy Moore, M. A.; the Rev. Walton Lowe Clay, M. A.;

Mr. Alfred E. Fletcher, F.C.S.; Mr. Christian Flück; and the Rev. J. S. Jones.

This report, together with the Treasurer's annual statement of accounts, was unanimously adopted.

The election of a new Council and office-bearers for the ensuing session was then proceeded with, and the following gentlemen appointed :—

Vice-Presidents :

Mr. J. A. PICTON, F.S.A.,
Mr. J. BIRKBECK NEVINS, M.D.,
Rev. H. H. HIGGINS, M.A.

Treasurer :

Mr. ALBERT J. MOTT.

Hon. Secretary :

Mr. JAMES BIRCHALL.

Members of Council :

Mr. ALFRED HIGGINSON, M.R.C.S.,
Mr. THOS. J. MOORE, *Corresponding Member Z. S.*
Mr. G. H. MORTON, F.G.S.,
Mr. EDWARD DAVIES, F.C.S.,
Rev. W. KENNEDY MOORE, M.A.,
Rev. WALTON LOWE CLAY, M.A.,
Mr. ALFRED E. FLETCHER, F.C.S.,
Mr. CHRISTIAN FLÜCK,
Rev. J. S. JONES.

The following gentlemen were next balloted for, and elected as corresponding members: Mr. GEORGE HAWKINS, Colombo, Ceylon; Mr. T. LEWIS INGRAM, of Bathurst River, Gambia.

Captain CAWNE WARREN and Captain JOHN ANJER PERRY were also elected associates.

The older associates were also re-elected for the year, according to the rules of the Society.

Votes of thanks were next passed to the office-bearers for the past year; and a special vote was accorded to Mr. Byerley, who had held the office of treasurer for fourteen years, and who now expressed his desire to retire therefrom.

AN EXTRAORDINARY MEETING

Of the Society was held at the

ROYAL INSTITUTION, on Monday, 19th October, 1868.

The REV. HENRY H. HIGGINS, M.A., VICE-PRESIDENT,
in the Chair.

This Meeting was called, pursuant to notice, to consider certain proposed alterations in the Society's laws, by which the constitution of the Council should be modified, the mode of electing the office-bearers changed, and the President's duties extended.

After some explanations from the Chairman, Mr. J. A. Picton, and Mr. Mott, it was unanimously resolved, that the alterations should be referred to the Council for further consideration.

FIRST ORDINARY MEETING.

ROYAL INSTITUTION, 19th October, 1868.

The REV. HENRY H. HIGGINS, M.A., VICE-PRESIDENT,
in the Chair.

The Minutes of the last Meeting were read and signed.

Mr. Bowyer was unanimously elected an Ordinary Member.

Mr. Morton exhibited some new wooden models of geological strata, now used for educational purposes instead of the ordinary diagrams.

Dr. Nevins exhibited a pair of the poisoned socks which have lately attracted notice, and stated that Mr. Whitthread had analysed the colours with great care, and had proved the entire absence of arsenic, which was at one time a constituent of the bright aniline dyes; he had also found that the colours were composed of picric acid combined with organic matters producing the various colours. This picric acid, when in contact with the damp skin, destroys the cuticle, and eventually produces a sore. At the request of the meeting, Mr. Whitthread promised to show some experiments on the subject at the next meeting.

Mr. Picton exhibited a small gold cross, said to have been taken from King Theodore by a foreign officer attached to the Abyssinian expedition; also an Abyssinian manuscript Bible; both lately presented to the Free Museum by Mr. C. Stoess, the Bavarian consul.

Mr. T. J. Moore exhibited the skulls and principal bones

of two specimens of the Lamantin, or West African Manatee. These very interesting specimens were lately presented to the Free Museum, with other objects, by Mr. R. B. N. Walker, corresponding member of the Society. Mr. Moore pointed out the principal characteristics of the Manatees, or sea cows, and of the Dugong, their nearest ally, and the chief points of difference between these and the whales, porpoises, and other true cetacea. The skin and perfect skeleton of this West African Manatee, or Lamantin, are still desiderata to the Museum, as are also the skin and skeleton of the Manatee from the West Indies and American coast, and the skin and skeleton of the Dugong of the Indian Ocean and Australian seas.

Mr. Consul Hutchinson stated that the Lamantin seemed to occur more frequently in the Old Calabar river than in the Niger or other West African rivers with which he was acquainted.

Dr. Nevins, Mr. Higginson, and the Chairman spoke upon various points of interest in the skulls and bones exhibited, and their gratification at such satisfactory results of Mr. Walker's labours in the cause of natural history.

The following paper was then read :

ON THE INFLUENCE OF MIND UPON THE MOLECULAR FORCES OF MATTER.

ILLUSTRATED BY EXPERIMENTS.

By J. BIRKBECK NEVINS, M. D. LOND., V. P.

THE tendency of modern scientific enquiry has been to shew that all those forces, which have been called the forces or powers of nature, are merely modifications of some one common force, which is manifested now as heat, and at another time as light, again as chemical attraction, and once more as the attraction of gravitation. Still again we find it modified, and assuming the form of muscular motion, of the so-called vital force, or of those varieties of electrical power, which have long been considered only varieties of the same essential nature. And the latest development of the views which are prevailing upon this subject is to declare, that the varied forms of leaves and flowers also, of vegetables and animals, are dependent upon a mere modification of that principle, or agency, which produces the more mechanically regular forms of inanimate matter which we designate as crystals.

The tone in which modern science gives her utterances conveys the impression (whether she is conscious of it or not) that these forces act *suâ sponte*, or "of necessity," and that their results are independent of any overruling power, which limits or controls their action. So that, given certain forces, such and such results will inevitably occur. Now the view that I wish to bring before you, and to illustrate by experiments, is, that *granted the existence of these forces, and*

their ordinary mode of operation, they are all under the control of intelligence and will, which render their effects not the results of necessity, but of mind and overruling power.

The language in which these views are expressed, assumes that matter of every kind consists of minute particles, to which the name of "molecules" has been given; and the term "molecular forces" is employed to express the power, whatever it may be, that matter exhibits to our senses. Since, therefore, we find that the particles of matter do, somehow, attract each other, and tend to move together, this attraction, whatever it may be, is called a "molecular force;" and since, under certain circumstances, a seed is capable of being developed into a plant, the power which is competent to produce this change is supposed to be resident in some way in these molecules or particles of the seed.

What, therefore, we have been accustomed to call "vital force," is now classed under the more comprehensive title of molecular force; and is assumed to be merely a modification of that power, which at first binds the particles of the seed together into a coherent mass. At a later period it produces the phenomena that we call vegetable life, or vital growth; and at a still later period (when what we have been accustomed to call life has terminated), this force is changed into what has been hitherto called chemical affinity; and the changes amongst the particles of the body, which are commonly known as decay or animal decomposition, are now considered as simply further molecular changes, *i. e.*, changes amongst the molecules or particles of the body, which have merely altered their mode of action, the essential power being the same in all these varied manifestations.

The views here put forward may be illustrated by experiments, which shew the development of one kind of force, as resulting from the exertion of another; as when, for example, I cause my vital power to produce muscular motion, which

shall cause this magnetic arrangement to revolve, the result of which is the brilliant light known as the magnetic spark. This, we readily see, is, in some sort, a transformation of vital power; for when that flags, the muscular motion abates, and the light diminishes; and it would eventually cease altogether, coincident with the cessation of mechanical motion, that would result from the cessation of muscular motion, which would occur on the exhaustion of the vital power. And then, if this transformation into light is again to be restored, we must have recourse to another form of force, viz., the chemical force of digestion; and this, again, will be dependent for its effects upon the previous manifestation of a different form of vital force, which has produced the animal or vegetable food, which is taken to replenish our waste, and to renew the series of changes that have thus passed before our notice.

This transformation of one kind of force into another may be further illustrated by an experiment, with which you are probably familiar, but which we shall repeat for a purpose to be hereafter brought before your notice. If we take this chemical arrangement, which we call a galvanic battery, we shall at first excite the form of force which we call chemical action, by pouring acid into the jar, and exciting the combination of the acid with one of the metals employed in its construction. This will develop what we call galvanism, or a galvanic current, which is at present so tranquil in its action as to be imperceptible; and by the well-known arrangement here shewn, we can convert this galvanic force into magnetism. By a different arrangement we can convert it into heat, either so slight as to occasion no inconvenience to the fingers, when in contact with it; or into heat so intense as to make platinum wire first red-hot, then brilliantly luminous, and at last liquefied by its intensity; light also being freely developed as a result or change of this galvanic force.

We can still further modify it, so as to re-convert it into a chemical force, and this either in the form of decomposition by making it decompose this water, or as a force of composition, by making it combine the elements upon this stand in the explosion of this gunpowder. We can again change it into a life-reviving, nervous force, by applying it to a heart which has almost ceased to beat, or to a chest which has almost ceased to breathe; in which case the vital power will often be reanimated, and health may be eventually restored. Or we may render it an agent destructive of animal life, as by applying it with greater power. Lastly, we convert it into mechanical motion, acting in opposition to gravity, by making it wind up this weight; and we end by converting it into muscular motion, with which our series commenced.

Now the point to which I request your special attention is this: that every one of these phenomena has been dependent upon the action of mind. It was mind, in the first instance, that commenced the muscular motion that was developed through various stages into light; and it has been a mere question of mind or will, whether the molecular forces of the galvanic battery should remain quiescent and without manifestation, or whether they should become active in the various ways we have seen. If our mind had willed it, the force called galvanic might have been indefinitely prolonged; and it is conceivable that we might have had materials enough to continue its tranquil, unobtrusive action for ever. But the continuance of its action depended entirely upon the mind that willed it in the first instance; for the moment that mind willed a change, the tranquil, imperceptible action ceased, and a sudden bright light was excited, whilst a remarkable phenomenon was produced amongst the iron filings, gathered up, contrary to gravity, under the poles of the magnet. Again, it was purely a question of mind, whether its next manifestation should be the evolution of life-sustaining oxygen, or the deadly effects

of gunpowder explosion; whether it should restore failing vitality, or at once extinguish the vital power. And all these changes, be it observed, are entirely in accordance with the so-called "laws of nature." My mind has violated none of these laws, and yet it has shewn its power over them in such a way that the operation of each is suspended at will; and it rested entirely in the willing mind, which laws should become active, and which should be suspended.

How entirely the effects of molecular forces are dependent upon the operations of mind may be illustrated by the following two experiments, in which we have precisely the same substances employed, and the same molecular forces in operation, and these also called into activity in the same way, by the same operation of mind in the first instance. Yet the result in one case shall be a beneficial agency of the gentlest description, whilst in the other it shall be a destructive agency, which, on a larger scale, would repeat the fearful ruin that has recently occurred throughout South America. In these two experiments, we have gaseous oxygen ready formed, and contained in a glass flask in the one case, and in a collodion balloon in the other. In both cases we shall have gaseous hydrogen escaping from a bottle, in which it is being set free, and we shall make it combine with the oxygen by the application of heat, until it takes fire. In both cases this heat will be obtained and applied by the ignition of a match; and yet in the one case we shall have the finest and gentlest dew that could fertilise the earth, and in the other we shall have an explosion that will dissipate all traces of the apparatus employed for its exhibition.

We have yet a different series of phenomena not without their bearing upon this point.

In the seeds now before us, and the water, and the spirit lamp, and the matches, we have molecular forces which for the present, because I so will it, are in a state of equilibrium

and quiescence. But as soon as mind operates upon them, the forces of the match are roused into violent action. By a further operation of mind, the forces in the lamp are excited to activity; still further, we excite forces in the water, of which there was previously no manifestation; and then, what? Why then the forces (molecular, if you choose) in these seeds are excited, and they have sprouted. But what now? Precisely the same forces are still before us, and are excited as at first; but, by our mind willing it, that force which we call the vital force, or, if you choose, the molecular force, of these seeds is destroyed, and without any visible change having been effected, their vitality is at an end. And if our mind wills it still further, these same molecular forces shall so influence the seeds as to destroy, not only their vitality, but all resemblance to their original condition; and the same forces, excited in the same manner, shall produce either living vegetation, or an inanimate mockery of the living being, or a smouldering and sightless object in which we cease to recognise anything that could recall the original to our minds; and yet all this shall be in perfect accordance with the laws of nature, not one of which has been violated, when the operation of mind has produced now life, and now destruction.

If now we enquire for the common bond which connects all these varied manifestations of force, we find that it is some form of "motion" according to the teaching of modern philosophy, some of whose most recent utterances I will now briefly lay before you. That sound is the result of motion has been taught from our earliest days; and that light also is the result of motion has been the universal teaching of philosophers in this century; that magnetism is an effect of motion, viz., of the circulation of a galvanic current (whatever that may be) round bodies, which in consequence became magnetic, has been generally recognised since the

theory was proposed by Ampère about thirty years since ; but it is of late years only that the theory has been propounded that heat also is merely a form or mode of motion, and that chemical action and vital phenomena are also merely modifications of motion. The character of this motion is generally agreed upon by philosophers in the case of sound and light, which are universally recognised as being caused by undulations or waves of an elastic medium ; and although the motion of heat is not yet so well defined or accurately calculated, it also is often, though not unvaryingly spoken of, as resulting from undulations, similar in many respects to those of light, though less numerous or rapid. So far as I am aware, the theory of undulations has not been applied to magnetism, though it is not difficult to believe that it will eventually be so ; for the so-called currents of Ampère may as easily be mere undulations, as what is understood in an undefined kind of way by the term "currents." What the nature of the motion is in the case of chemical action, galvanism and electricity, and still more of vital phenomena, is still perfectly undefined by scientific men ; but the following are the terms in which chemical action and vital phenomena are spoken of by one of the most distinguished teachers of the new philosophy :—

"Pure carbon burns in oxygen, and heating this diamond to redness, I plunge it into the jar of oxygen gas, in which it now glows like a little star, with a pure white light. How are we to figure the action here going on ? You are to figure to your minds the atoms of oxygen showering against this diamond on every side. Every oxygen atom as it strikes the surface, and has its motion destroyed by its collision with the carbon, assumes that form of motion which we call heat." Tyndall *On Heat*, 4th edition, pp. 45, 46. "It is to the clashing together of the oxygen of the air and the

constituents of our gas and candles that the light and heat of our flames are due." *Ibid.*, p. 51.

Again; "All the impressions which we derive from heated air or vapour are due to the impact of gaseous molecules. They stir the nerves in their own peculiar way; the nerves transmit the motion to the brain, and the brain declares it to be heat. Thus the impression one receives on entering a Turkish bath is caused by the atomic cannonade which is there maintained against the surface of the body. I would state this as a hypothesis advocated [by eminent men, without expressing either assent or dissent myself." *Ibid.*, p. 64.

And again; "When you wound your finger, the nerves which run from the finger to the brain convey intelligence of the injury. We have the strongest reason for believing that what the nerves convey to the brain is in all cases *motion*. It is the motion excited by sugar in the nerve of taste, which, transmitted to the brain, produces the sensation of sweetness, while bitterness is the result of the motion produced by aloes. It is the motion excited in the olfactory nerves by the effluvia of a rose which announces itself to the brain as the odour of the rose. It is the motion imparted by the sun-beam to the optic nerve, which, when it reaches the brain, awakes the consciousness of light; while a similar motion imparted to other nerves resolves itself into heat in the same wonderful organ; the motion here meant is not that of the nerve as a whole; it is the vibration or tremor of its molecules or smallest particles.

"Different nerves are appropriated to the transmission of different kinds of molecular motion. The nerves of taste, for example, are not competent to transmit the tremor of light, nor is the optic nerve competent to transmit sonorous vibration. It is the motion of the auditory nerve, which, in

the brain, is translated into sound."—Tyndall, *Lectures on Sound*, p. 1.

The quotations hitherto given refer to the forces operating either in inanimate bodies, or else in animate bodies which are not in a condition of growth. But those now to be laid before you refer to the period of growth and development in living beings, and state the principle upon which this is conducted; and I now quote from the address given at Norwich last month by the same eminent philosopher:—

"If you look at a watch, you see the hands; why do they move? And why are their relative motions such as they are observed to be? These questions cannot be answered without mastering its various parts; and when this is done, we find that the observed motion of the hands follows *of necessity* from the inner mechanism of the watch, when acted upon by the forces invested in the spring.

"There have been writers who affirmed that the pyramids of Egypt were the productions of nature; and, in his early youth, Humboldt wrote an essay with the express object of refuting this notion. We now regard the pyramids as the work of men's hands. Their blocks of stone were moved by a power external to themselves, and the final form of the pyramid expressed the thought of its human builder. Let us pass from this illustration of building power to another of a different kind. When a solution of common salt is slowly evaporated the water disappears; but the salt itself remains behind; its particles, or molecules, as they are called, begin to deposit themselves as minute solids, and we finally obtain a mass of salt of a definite form. What is that form? It sometimes seems a mimicry of the architecture of Egypt. We have little pyramids, built terrace above terrace, from base to apex; and the human mind is as little disposed to look at these pyramidal salt crystals without further question, as to look

at the pyramids of Egypt, without enquiring whence they came. How then are these salt pyramids built up?

“Guided by analogy, you may suppose that, swarming among the constituent molecules of the salt, there is an invisible population, guided and coerced by some invisible master, and placing the atomic blocks in their places. This, however, is not the scientific idea, nor do I think your good sense will accept it as a likely one. The scientific idea is, that the molecules act upon each other without the intervention of slave labour; that they attract and repel each other in certain definite directions, and that the pyramidal form is the result of the play of attraction and repulsion. While then the blocks of Egypt were laid down by a power external to themselves, these molecular blocks of salt are self-positd, being fixed in their places by the forces with which they act upon each other.

“The forms of minerals resulting from this play of forces are various, and exhibit different degrees of complexity; and now let us turn from what we are accustomed to regard as a dead mineral, to a living grain of corn. In the corn the molecules are also set in definite positions; but what has built together the molecules of the corn? I have already said, regarding crystalline architecture, that you may, if you please, consider the atoms to be placed in position by a power external to themselves, and the same hypothesis is open to you now. But if, in the case of crystals, you have rejected the notion of an external architect, I think you are bound to reject it now, and to conclude that the molecules of the corn are self-positd, by the forces with which they act upon each other. It would be a poor philosophy to invoke an external agent in the one case, and to reject it in the other.

“Let us now place our corn in the earth, and subject it to a certain degree of warmth; in other words, let the molecules both of the corn and of the surrounding earth be kept in a

state of agitation (for warmth is, in the eye of science, tremulous molecular motion); under these circumstances the grain and the substances surrounding it interact, and a molecular architecture is the result.

"A bud is formed, which reaches the surface, where it is exposed to the sun's rays, which are also to be regarded as a kind of vibratory motion, that now enables the green bud to feed upon the carbonic acid and the aqueous vapour of the air, appropriating those constituents of both for which the blade has an elective attraction, and permitting the other constituent to resume its place in the air. Thus forces are active at the root, forces are active in the blade; the matter of the earth and the matter of the atmosphere are drawn to the plant, and we have in succession the bud, the stalk, the ear, and the full corn in the ear; for the forces at play act in a cycle, which is completed by the production of grain, similar to that with which the process began.

"Now an intellect sufficiently expanded could see in this process, and its consummation, an instance of the play of molecular forces. It would see every molecule placed in its position by the specific attraction and repulsion existing between it and other molecules. Nay, given the grain and its environments, an intellect sufficiently expanded might trace out, *a priori*, every step of the process, and, by the application of mechanical principles, would be able to demonstrate that the cycle of actions must end, as it is seen to end, in the reproduction of forms like that with which the operation began. A similar NECESSITY!!* rules here, to that which rules the planets in their circuits round the sun.

"But I must go still further, and affirm that in the eye of science the animal body is just as much the product of mole-

* The capital letters and notes of admiration are my own, not Professor Tyndall's; and have been used simply to draw attention to the principle laid down by him.

cular forces as the crystal of salt or sugar. Given a sufficiently expanded intellect, and other necessary molecular data, and the chick might be deduced as rigorously and logically from the egg, as the existence of Neptune was deduced from the disturbances of Uranus."

Now the views here expressed assign the construction of the Egyptian pyramids to the influence of an external mind, and yet, whilst drawing attention to the resemblance between them and crystalline structures, they exclude all idea of an influencing mind in the case of crystals, as well as in that of animal and vegetable developments; and attribute the whole of the phenomena to mechanical forces resident in the molecules, and acting of "*necessity*," so as to produce certain results. But even in the case of crystalline forms, we find the operation of the so-called molecular forces so far from necessarily producing certain results, that they are under the controlling influence of mind as fully as the various modifications of molecular action which we have already seen; for, in the case of these crystals of muriate of ammonia, it is the influence of my mind operating upon them, which has caused some of them to assume the form here seen, and others the arrangement here seen; whilst others again have no appearance of crystalline arrangement at all; and still others are characterised by a variety of colours, of which the rest are entirely destitute.*

Nay, so far are crystalline forms from being the result of necessity, that in the very illustration chosen by our philosopher, viz., common salt, this beautiful pyramid of salt cubes now before you is the product of much intelligence, in addition to the effects of molecular forces; and the most ardent teachers of molecular forces would recognise without hesitation the influence of mind in its production. In the

* The different forms of crystals were shewn at the meeting.

absence of controlling intelligence, we shall all feel that the result now before us would not have been obtained.

And if the influence of mind is thus important, even over inorganic matter, we scarcely need to be reminded of the experiments we have already seen, illustrative of its effect upon the development of living beings, such as the seeds previously exhibited; or to be told how constantly an external mind produces its effect upon the development, both in body and mind, of the animated beings, whether rational or irrational, that are under our daily care and observation.

And now, in summing up the conclusions which I wish to bring before you, I would say that the teaching of modern philosophy appears, whether designedly or not, to exclude the idea of any agency in the operations of the natural world, except so-called molecular forces, which act of "necessity" (see page 19, line 28); *and my object has been to bring to our thoughts the constant sustaining and controlling influence of mind over these molecular forces*; and if our own limited intelligence and feeble will can continue, suspend, or modify every kind of force in nature, with which we are acquainted, we may more easily realise a sense of the constant presence and operation of the still greater Intelligence, and still more powerful Will, which first imposed what we call the laws of nature, and still sustains, controls, and modifies them at His pleasure.

SECOND ORDINARY MEETING.

ROYAL INSTITUTION, 2nd November, 1868.

J. A. PICTON, F.S.A., VICE-PRESIDENT, in the Chair.

The Minutes of the last Meeting were read and signed.

Messrs. W. M'Coskey, Charles Sharp, James Lloyd, B. A., W. Norrie, and J. Murray Moore, M.D. Edin., were unanimously elected Ordinary Members.

Mr. Picton brought before the Society the collection of English silver coins belonging to the Free Library, and made some remarks on the method of arrangement.

Mr. J. O. W. Fabert brought before the Society some exceedingly beautiful corallines from the Fiji Islands, and some clay nests made by hymenopterous insects in the cabin of a ship, lying some two miles from shore on the coast of Mexico, near Tlacatalpam.

Mr. Moore remarked upon the extreme beauty, large size, and fine condition of the corallines (*Distichopora coccinea* and other species) exhibited by Mr. Fabert.

Mr. Moore exhibited a stuffed specimen and skull of an eared seal (apparently *Otaria leonina* of Dr. Gray's "Catalogue of Seals and Whales in the British Museum," 2nd edit., 866, p. 59) lately collected at Islay, and presented to the Free Museum by Captain Cawne Warren, associate of the Society. Specimens of eared seals of any species are very rare in collections.*

The following paper was then read :

* Dr. Gray has since confirmed Mr. Moore's determination of this seal.—
EDITOR.

ON THE PARANA INDIANS;

WITH SOME EPISODES OF THE PARAGUAYAN WAR.

THOMAS J. HUTCHINSON, F.R.G.S., F.R.S.L., F.E.S.,
F.A.S.L., &c., &c., &c.,

H. B. M. CONSUL FOR ROSARIO.

AT the period when was discovered that part of South America through which the Paraguay, Parana, and Uruguay rivers flow into the Atlantic Ocean, the whole of the territory on either side of this magnificent basin, and much of it far into the continent, was peopled by tribes of Indians. It may be scarcely necessary for me to observe that the title "Indians" was given to the Aborigines of North and South America by the celebrated Christopher Columbus, from having supposed that his first discoveries were made on islands at the extremity of India.

In A.D. 1515, the Spanish navigator Don Juan de Solis, having entered this basin as its first explorer, was murdered, and Lozano says (book ii., chap. 1) eaten, by the Charrua Indians, who seduced him, with professions of friendship, to go on shore near the point now called Maldonado. His sailors gave to these waters the title of the De Solis river. Sebastian Cabot, "the goode olde famuse man," came here in A.D. 1527, twelve years afterwards; and from him, or some of his party, it received the name of Rio de la Plata, or River of Silver.

When approaching this river for the first time, it is very difficult to realise the idea of its being a water-shed from inland; for it seems all that the poet Thomson describes it—

"The sea-like Plata, to whose dread expanse,
Continuous depth, and wondrous length of course,
Our floods are rills."

Indeed it is an enormous basin of water, from its mouth of a hundred and fifty miles wide, between Cape Santa Maria and Cape San Antonio, to a distance of beyond three hundred miles up to where the Delta of the Parana begins, and where, at the confluence of the Uruguay, the title of La Plata ceases. The immense length of these combined streams may be judged from the fact, that a steamer of ordinary draught can go up the Parana and Paraguay, and penetrate into the heart of Brazil, through the Cuyaba river, and amongst the diamond mines of Malto Grosso, to a distance of two thousand five hundred miles from the La Plata mouth.

The Parana Delta, the base of which is found at a distance of about twenty miles above Buenos Ayres, stretches to Diamante in the Province of Entre Rios. Captain Page computed its extent to be a hundred and seventy-eight miles as the crow flies, and two hundred and forty-five miles by river course. This is much greater than the Delta of either the Nile or the Mississippi, the former being only eighty miles in length, and the latter about a hundred and eighty. I am informed by Mr. W. H. Bates, the celebrated Amazon explorer, that the Amazon has no true Delta at its mouth, but has an interior one about eighty miles from the sea, the length, breadth and area of which are quite unknown.

The Parana Delta, at its base, across from Buenos Ayres Province to Entre Rios, has a stretch of fifty miles. Thence to its apex at Diamante it is a collection of islands and channels. Such of these islands, on the right side, as stood here in the time of the early Spanish discovery, were inhabited by the Guarani Indians. Many of them are of comparatively recent formation, from the alluvial detritus that is washed down with the current from the interior.

For several centuries the Spaniards held a very precarious

position in the River Plate territories ; but they managed to keep their footing, partly by exterminating the Indians, and partly by crossing the two races. In the present day, I may say, without fear of contradiction, that the whole of the Banda Oriental, of Entre Rios, and Corrientes, does not contain a single pure Indian. Buenos Ayres, in the Pampas direction, as well as Santa Fe and Cordoba, in their neighbouring locales of the Gran Chaco, have got some of these troublesome neighbours. And when I tell you a few of their manners and customs, I have no doubt you will agree with the Commodore who wrote the following laconic and expressive despatch to the Lords of the Admiralty: "In compliance with your Lordships' instructions of (such and such a date), that I should report on the manners and customs of the South American Indians, in whose neighbourhood I have been lately cruising, I regret being compelled to state that they have no manners, and their customs are beastly."

Around these shores dwelt the Charruas and the Yaroos, on the east ; whilst the Querandies and Guaranis were on the west. The Spanish historian De Azara says, that "It is scarcely possible to conceive anything lower in the scale of humanity than the manners and customs of the Charruas." Their arms were lances and arrows ; they were very expert in tracking their enemies, never carried anything on horse-back but their weapons of warfare, when they went to fight, and could bear any amount of fatigue ; for, in their guerilla expeditions, they were often obliged to subsist during several days without any food to eat, or drink. They never cut the hair, which was always very long. The women allowed theirs to flow down the back ; and the young men, during the period of coxcombry, turned up their locks with a cord, whilst ornamenting them with white feathers placed vertically. I could scarcely have believed what De Azara says of the Charruas and other Indians, as well as the Mulattoes of

Paraguay, eating lice with a relish, were I not eye-witness to this practice myself. In the Province of Santiago del Estero, as well as in the suburbs of Rosario city, I have many a time seen a woman sitting on the ground, with her brother's, or husband's, or son's head on her lap, chasing these small deer in their coverts, and, when one was nabbed, swallowing it with apparent gusto.

At the first menstruation period, the Charrua girls had three blue lines pricked into the face,—one going from the forehead to the tip of the nose, and each of the others traversing the temple at a right angle from the first named. These lines remained indelible during lifetime, being marked with potter's clay, punctured in.

A few days after the birth of a boy, the mother made a hole in the child's lower lip, and introduced there the BARBOTE, which remained *in situ* till death, or till another, consequent on the first being broken, needed to be inserted. This "*manly badge*," as it was understood to be, was composed of two pieces of stick, joined together, and of the same size, that is to say, half a hand in length, and the sixth part of an inch in thickness; one of these had a head like a nail, which head, being placed in contact with the gum of the lower jaw, its opposite point was put through the opening in the lower lip, and to this outside was fixed, by a small hole, the other piece of the Barbote.

Their houses, or toldas, were nothing more than the tree branch edifices of the Guaicaruses, described in my *Buenos Ayres and Argentine Gleanings*,* into which they entered on all fours, like rabbits or pigs. They had no industry of agriculture or manufacture; were nearly always naked, except in cold weather, when they put on a piece of fox or beaver skin to cover the chest; never washed their hands, faces, or

* Chap. xiv., page 121, published by Stanford, of London, 1865.

bodies, nor cleaned out their toldas. Consequently, when a large number pitched their tents together, the smells from themselves and their habitations were abominable. Cultivating nothing, they, of course, subsisted entirely on the product of the chase. They had no wedding ceremony, except the mere asking and taking in marriage. Polygamy and divorce were permitted to anybody in the fullest sense of *chacun a son goût*.

Their children were not taught either respect or obedience to parents. Differences and dissensions were regulated by public discussion and deliberation. Manslaughter was unknown. The fermented drink used by this tribe was called "Chicha," being prepared from wild honey and water.

They had few diseases, but the doctors prescribed the same remedy for all, *au Sancho Panza*, and that was to cup the pit of the stomach.

When a man died, he was buried along with his war-horse, that was killed at the grave for the occasion. Their cemeteries were invariably on the top of a hill, and their style of mourning was a very cruel one. It was begun by weeping and screaming, which were kept up for a considerable time. Then, if the defunct party had been a father, husband, or brother, in the position of "head of a family," the daughters, widow, and married sisters were obliged to have (each) one joint from the finger cut off. And this was repeated for every relation of a like character who died, the primary amputation being from the little finger. Moreover, the lance or knife of the dead man was plunged several times into the arms, breast, or ribs of the living relations, said operation being performed by the nearest of kin, nominated for that purpose. Any part of the body, from the stomach upwards, might be chosen for this gashing. Succeeding these rites, they remained shut up in their

houses for two months, during which time it was rigidly incumbent to eat and drink sparingly.

The husband never went into mourning for the death of his wife, nor the father for any of his daughters. But if the latter were adults when their father died, it was obligatory on them to remain perfectly naked in a dark room, and to eat or drink nothing, for two days. After this, and for ten or twelve days more, they were permitted to feed upon small bits of partridge flesh, or partridge eggs, that were brought to, and left outside of, their doors by boys, forbidden to speak a word on the occasion. To these succeeded other imbecilities of brutality, such as nipping bits of flesh out of the legs and arms with pincers made of cane branches. Indeed the whole of the mourning ceremony was a disgusting pantomime, more particularly when we remember that there was neither love nor respect for its objects, whilst they were living.

The tribe of the Yaroos were expert fishermen, who lived on the Eastern side of the Uruguay River, between the Negro and San Salvador streams, and who, although neighbours of the Charruas, mixed very little with these people. Indeed their idiom was entirely different, and in war they used cudgels, arrows, and lances. Two other tribes, the Boanes and Chanas (both of whom were insignificant), came to be destroyed by the Charruas in the sixteenth century.

The Minuanes occupied the now-styled province of Entre Rios. In all their manners and modes they resembled the Charruas; but there was a little difference in their mourning ceremonies. As, for example, on the death of a husband, his widow was obliged to have a finger joint amputated. She, likewise, was to have her hair cut off, and said hair tied round her face like a bandage. Her breasts were to be concealed from view by a skin or rag, during the

official period of sorrow ; and she was compelled to live in solitude for several days.

The same style of mourning was incumbent on the daughters of a family for the death of any one that had nursed them in their own houses ; but not for their father. The ceremonial which we are noticing lasted amongst the male portion of a Minuanes family only for half the time that it did with the Charruas. Part of its discipline consisted in passing a fish-bone, that had been sharpened, and was pretty thick, through the interior and exterior muscles of the leg, as well as of the arm, from wrist to elbow. This instrument was thrust in and out, to the accompaniment of a dolorous chaunt, and with as much regularity as the automaton of a sewing machine.

The Jesuit Father, Rev. Francisco Garcia, tried to form a Christian colony of these people, at a place to which the name of Jesus Maria was given, on a bank of the river Ibicuy. But they returned, after a few years, to their wild and savage wood-life, except a few that incorporated themselves with the Guarani tribe, in a town called San Borja. The last of them were exterminated in 1679 by the Spaniards, at Cayesta, in the Gran Chaco.

The chief tribe of the Pampas Indians was entitled "Querandis" by the early conquerors, although they called themselves "Puelches." At the time that De Azara wrote his book, namely, at the end of the last century, he calculated the Pampas Indians to consist of only four hundred warriors, or heads of families. Their language was said to be more expressive than any of the other Indian dialects ; on occasions being capable of a sublime eloquence, as, for instance, when the Caciques harangued their grievances to the Spanish Vice Roys.

Unlike the Charruas, they paid attention to dress and

appearance. Although they did not paint the bodies, nor cut the hair, the males wore their locks with the ends turned up, and a tape tied tightly round the head, so as to keep it in an erect fir-bush position. The women divided their hair in the centre, making on each side a large and well fastened clump,—the Indian chignon, I suppose,—tied with a piece of ribbon. This presented the appearance of a horn, and projected over each ear to the length of the upper arm. They not only used combs, and washed themselves, but were in every respect the cleanest of the Indian nations. In their mien they were vain and haughty, as well as of little or no condescension.

The Pampas ladies did not paint, but wore necklaces with hanging ornaments, and many rings, of considerable value. In their toldas, or houses, they were scarce of clothing, but when they made visits of state, ceremony or business to Buenos Ayres, their whole bodies, except the faces and hands, were covered with ponchos. The wives of rich men adorned themselves and their sons with much elegance on these occasions. Their gala-day ponchos, or mantles, were ornamented with ten to twelve plates of brightened copper, each being from three to six inches diameter, that were sewed on. They wore, also, untanned leather boots, made of the finest hide, and dotted over with copper tacks.

The Pampas women all rode on horseback in the same cross-legged fashion as the men; and the wealthy ones had the head-gear of their horses covered over with silver plates, the spurs and stirrups being made of the same metal. Husbands and fathers used the like style of ornaments for their horses as the ladies; such articles of luxury being always commensurate with, and indicative of, the financial status of the owner.

Although they were totally naked when riding across the

Pampas, they invariably carried hats, as well as clothing, the latter consisting of a piece of coarse frieze, that was to be fastened round the body with a belt, and reached to the knee. These were worn only when it came on to rain, or when they had necessity to visit the Vice Roy's capital of Buenos Ayres. No others of the wild Indian tribes of South America were known to dress in the same luxury as the Pampas Indians, except the Aucas, or Araucanos, who dwelt in the Chilian neighbourhood.

With the Pampas Indians the title and position of Captain or Cacique was hereditary. Their houses were constructed in the simplest manner, with Guanaco skins. They were accredited to be more affectionate in their family relations than any other of the Indian tribes. It appears that they made no use of bows and arrows in fighting, their weapons of war being lances and bolas (balls).

With some of these latter they threw in the combustible material that set fire to, as well as destroyed, Don Pedro de Mendoza's first settlement at Buenos Ayres; and a blow in the stomach from one of these projectiles killed Don Pedro's brother, the Admiral.

The Aucas or Araucanos Indians resided on the west of the Pampas, near Chili; and all we can ascertain of their anthropology is, that, from time to time, they assisted the Querandis in transporting stolen cattle across the Cordilleras. The southern part of the Pampas was occupied by the Balchitas, Uhiliches, Telmelches, and other tribes, all of whom were branches of the original Quelches horde.

The Guarani Indians were the most famous of the South American races, chiefly in relation to their connexion with the Jesuits.

"When America was discovered," De Azara tells us, "the Guaranis peopled the South Western Coast of the Rio de la Plata, from Buenos Ayres to Las Conchas, and

continued on the same Coast, without occupying the opposite side, through all the Islands of the Parana, and to a distance of about sixteen leagues inland from the River's side up as far as 29° or 30° of latitude. From this point they were found only on the opposite or North Eastern Coast of the Parana, in which they again continued up to 21° of latitude, without being found on the Western side. But they extended in the direction of the tropics as far eastward as the sea, occupying the whole of Brazil, Cayenne, and even more. They likewise held towns (intermediate with other nations) in the province of Chiquita, the eastern side of the Andes. The Chiriguanas of Peru were said to be of the same stock as the Guaranis.

And this is the tribe whose language has been for more than two hundred years spoken by the Paraguayans, chiefly from the fact that the Guaranis formed the largest contingent of Indian mixture with Spanish blood of those who settled themselves in that part of South America called Paraguay. This last name is derived from the tribe the Payaguas, who inhabited the locale at the period of the early Spanish settlement there.

The word "Guarani" in their native dialect signifies "a warrior." Captain Page gives a most graphic description of the military order and regularity of the daily life amongst the Guaranis at the Jesuit reductions. That military discipline is one of the most remarkable characteristics of Paraguayans now-a-days.

The original Guaranis were agriculturists, cultivating calabashes, maize, mandioca, and potatoes. They likewise fed on honey and wild fruits, as well as hunted monkeys, birds, badgers, and killed fish with bow and arrow. They also had canoes, and were accredited by some authors to have reared geese, fowl, and sheep. But this is denied by

De Azara. A catechism and grammar of the Guarani language has been compiled and printed by the Jesuits.

In early times they went naked, like the other Indians, put the same virile badge in the boys' lips as the Charruas, and made a like marking on the girls' faces after the first menstruation. The men had a circular scalp shaved on the head, in the same fashion as a clerical tonsure, but of much larger diameter; and they swam with a facility and endurance as if they had been quadrupedal and amphibious. As all the others, except those of the Pampas, they washed neither their scanty clothing, nor faces, nor hands. De Azara sets them down as the lowest of the low for pusillanimity and cowardice; adding "that the Guaranis in Mexico, Brazil and Peru, as well as in the River Plate, were the first to bow their necks to the European yoke. Whilst the other tribes, more valiant, though less numerous, never gave up to their merciless invaders till they were swept away from the living nations." The account of the Guarani Indians, related by Captain Page, and taken chiefly from Charlevoix, would give one a very different notion from that promulgated by De Azara. Page says, "Although not the most warlike of the aborigines, the Guaranis of the Jesuit reduction were brave and well disciplined."

The Tupis, who lived in the woods on the eastern side of the River Uruguay, up to $27\frac{1}{2}^{\circ}$ of north latitude, were reputed by the Guaranis as so many wild beasts. For they were said never to have slept two successive nights in the same place; to possess no language, but to howl like dogs; to have the lower lip slit in two by a vertical cut; to be cannibals; and sometimes to abide in nests or cages made up in trees. De Azara avers that these traits of character were the invention of a Jesuit, and were not correct. But he gives us no authority for this contradiction, save his own *ipse dixit*.

Of the Guayanas horde, there were several tribes, independent of each other, and speaking different idioms, although having the same title of race. They were some of the most vigorous opponents of the Spanish invaders. The colour of their skins was not so dark as that of the other Indians. Like the Tupis, they were agriculturists, but did not keep any domestic animals. They were remarkable for being very much afraid of passing large rivers. In their general customs they resembled those already described.

The Nalicurgas Indians, who lived up near 21° S. Lat. were reputed to dwell in caves, to be very limited in number, and to go entirely naked.

The Guasarapos, or Gunches, dwelt in the marshy districts, near where the River Guasaripo (that flows into the Paraguay at $19^{\circ} 16' 30''$ S. Lat.) has its source. The people of this tribe used to travel down their river sides, till they reached Paraguay territory, and, although they joined with the Albayas to make war against the Niniguiquilas, marriages between the conflicting races were, nevertheless, often celebrated. The Guasarapos subsisted on the wild rice that grew in their neighbourhood, as well as on the fish of their rivers. The latter they killed with bow and arrow. Their custom of personal adornment was to pluck the eyebrows and eyelashes, as well as the beard, from the faces of young men, and to use the manly badge in a hole made through the lip, as previously mentioned.

The Cuatos lived inside of a lake to the west of Paraguay, and constituted a very small tribe, to the number of about thirty families. They never ventured outside of their lake, which they navigated in canoes, each capable of containing two persons. Whenever any stranger, by chance, came amongst them, they hid themselves in the bushes or reed masses; so that little or no account of their morals or manners can be given.

The Orejones dwelt on the eastern brows of the mountains of Santa Lucia or San Fernando, close to the western side of Paraguay River. De Azara says that the Alhayas called them the Agintequedichagas (one requires to take breath even after writing such an appellative). Although they had no canoes, they subsisted partly by agriculture, and principally by fishing. The different accounts given of these people by the Spanish writers, Alnar Nunez, Schimidels, and Ruy Diaz, are all doubted by De Azara, even to the important points of having holes made in their lips and noses, and of fastening their ears by cicatrices to the occiput.

The Nininguiquilas bore likewise the *aliases* of Potrereros, Simanos, Barcenos, and Lathanos. This horde consisted of many tribes, each independent of the other. The more northern of these kept up permanent relations of friendship with the Albayas. But the rest were in constant warfare with each other, and fought bravely with their clubs and arrows, when attacked by any foe that "meant business." All of these subsisted on agriculture, their vegetable condiments now and then varied by the use of animals caught in the chase. Nature gave them no beards; and they never had their hair cut, nor eyebrows or eyelashes plucked. In their stature, colour, form of the head, and figure of the body, they resembled the Guaranis. Their women, dressed in flowing mantles, which they wove from the Caraguata,* and adorned their necks with strings of beads of the brightest colours. The young boys used to wear plumes of feathers on their heads; and it was the custom of all to go perfectly naked, unless when cold made the wrapping-up a necessity of comfort.

The Guanas Indians were divided into eight separate tribes; for each of which there was a different name. Every

* This is the cordon, or cylindrical cactus, from which, in the present day, the Argentines make strong ropes, in the province of Santiago del Estero.

tribe of these owned a cacique of its own, and whilst this title was hereditary, the eldest son of the cacique had, even during his parent's lifetime, all the privileges of superior authority; but only in reference to such of his father's subjects as were born a few months before or after his birth. They differed from other hordes chiefly in having their houses swept out daily, and possessing a more difficult, because more guttural language. Their hospitality was proverbial; for they received, lodged, and fed travellers gratuitously, during several days, accompanying them to the next town on the recommencement of their journey. They possessed few horses, cows, or sheep, subsisting principally on agriculture. They plucked off the eyebrows and eyelashes, marked their boys with the same symbol of virility as before mentioned, cut the hair in the middle of the forehead, and shaved a big half-moon shape over each ear, leaving the remaining locks to grow naturally. Some of them shaved the front half of the head, and others the whole to the occiput, except, in the latter case, allowing a tuft to remain on the top.

Marriage amongst these people was effected without any other ceremony than the loving swain making a present to his sweetheart, the father's or guardian-relative's consent having been previously obtained. No inequality of rank or fortune was allowed to interfere with the betrothal. Before all, the wooer agreed with the maiden, in presence of her parents and relations, on the style of daily life, and the obligations of each contracting party. For these conditions were not the same in all weddings, "depending, as they occasionally did," says the historian, satirically, "on the caprice of the lady!" It often occurred that the contract included an obligation for the wife to make a scarf for her husband's neck; and it was also arranged whether she was to help him in cultivating the ground, in drawing water, and fetching home wood, in cooking all the food, or confining her culi-

nary art to the vegetable department alone. An important point of the agreement was centred in the covenant, as to whether the husband was to have more than one wife, or the wife more than one husband! And as a corollary, if this matrimonial latitude were agreed upon, it was always regulated as to the number of days and nights the "respective contracting parties in this case made and provided," as the lawyers would say, were to live together. Finally, the most minute matters were so debated and arranged in this contract that it might be said to be more of a commercial than of an amatory character. Yet, in spite of the minutiae of these agreements, they were sometimes infringed upon by one party or the other. No punishment, however, resulted from a dereliction on either side, save now and then, though very rarely, a divorce. "And this," observes De Azara, who, by the way, must have been a cross-grained old bachelor, "was almost always occasioned by the women!"

Amongst these Guanas the male population very much exceeded the female. This was accounted for by the fact that some of the mothers used unnaturally to bury alive their daughters in a short time after birth. The proportion of sons and daughters in a family was always regulated so as that the former should preponderate. The girls of these tribes were generally married at the age of nine years. They were clean and tall, as well as somewhat coquettish. The boys were not married until a more advanced age, and they used to paint, as well as adorn themselves with feathers, to a greater extent than was the custom with the majority of nations. They were very licentious, and often ran away with their neighbours' wives. But when the guilty parties in such a case were captured, the man was punished by beating him with a stick, whilst the woman was taken back by her lord and master.

The doctors of the Guanas were old women, and their

therapeutic skill extended no farther than that of the Charruas, already mentioned. Their dead were interred outside the front doors of the dwelling-houses, and the family spent a considerable time in mourning. The particular features of this are not however given.

They never made war unless on the defensive, and then they fought very bravely, with bow and arrows, as well as with large cudgels. Of captives in war, they killed only the grown-up men, taking the girls, women and boys as *bonâ fide* prisoners, and incorporating them with their families,—not as slaves, be it understood, but giving them the same privileges as if they were of their own offspring. They laid no restraint on their children in any way, and took no pains to teach the difference between right and wrong. Their sons were put through the following curious ceremony at the age of eight years. A number of boys of that age was sent to the camp early in the morning, and there they remained during the day without eating or drinking. In the evening they returned to the town, through which they walked in silent and solemn procession. On their arrival at an appointed place, the mothers or other female guardians passed a flame of some burning material over their backs, and then punctured their arms with sharp-pointed bones. Indeed, this last part of the operation was done most aggravatingly, although the person operated on gave no expression to his feelings of pain. At the conclusion of this ceremony, the mothers regaled their tortured boys with boiled beans and maize. The most curious part of this business seems to me, that we are not informed as to its *rationale*.

Worse barbarities than these, under the guise of religious or national ceremonies, were practised by the Albayas and Payaguas Indians, the latter of whom were in former times the chief tribe, as well as "Lords of the Manor," in

Paraguay Territory. Indeed, the ceremonies were so indecent as to seem almost incredible, and I therefore do not deem it expedient to describe them here.

The Albayas were styled the Machicuis and Enimgas by other authors than De Azara. They were a very tall and muscular race of people. One of their principal Caciques, named Nabidrigisi, was over six feet three inches in height. In 1794, being asked his age, he replied, that he did not know, but he remembered the building of Asuncion Cathedral, as at the laying of its foundation stone he was married, and had a son. As this event took place in 1689, and as it was probable he was not under fifteen years of age at the time, he must have been beyond a hundred and twenty years old in 1794. Even then he had not lost a tooth; and although his hair was sprinkled with a little grey, he could mount his horse, wield his lance, and go into the battle-field with as much apparent vigour as he had done a hundred years before.

The Albayas believed themselves the noblest, bravest, and most generous people of the world. With a spirit of the most intensely-savage aristocracy, they disdained to live by anything but hunting, fishing, and warfare. They had a choice collection of an excellent class of horses, of which they took the most attentive care, making it a point of almost religious observance never to sell, exchange, or give away any of their war-horses. In their habits towards children, wives, and caciques, they differed little from the barbarous customs of the tribes already described.

The Payaguas Indians, before and up to, as well as after, the period of the so-called conquest, were sailors, and domineered over the River Paraguay from 20 degrees of south latitude, to its junction with the Parana at 27° 10' S. Even in our days, we have been told, by the late Admiral Brown, of Buenos Ayres, that in no part of the world, out-

side of Great Britain and the United States, had he met with such expert sailors as the Paraguayans.

De Azara tells us that the Payaguas dialect was nasal and guttural, as well as so difficult to be learned, that no stranger could pick it up. Their women did all their out-door labour, made earthen pots, cultivated the ground, cut fire-wood and cooked. These females never ate meat, because it was supposed to do harm to the sex (although the why or the wherefore of this idea is not explained). Their mode of eating fish, on which they chiefly fed, was more artistic than lady-like; for they kept all the small bones inside their jaws as they went on in mastication, and only took them out *en masse* when the meal was concluded. They cultivated cotton, and wore cloth. Grown-up boys and girls went perfectly naked, except when the cold weather came on; but the dandies of the tribe used to paint waistcoat, trousers, and stocking patterns on their skins; an art very probably in imitation of the dresses of their early invaders.

It was the custom, on the death of a Payaguan, that his body should be rolled up by the oldest woman of the family, in a cloak or shirt along with his warlike armaments, and that he be sent in a canoe (hired for the purpose, no doubt, from some Indian Shillibeer), to be buried in his family cemetery. In very old times, the bodies were interred in a sitting position, leaving the head above the ground, and this was covered with a large baked earthen pot. But as the armadillos and wild pigs had no respect for the defunct red man, and were accustomed to devour the parts exposed, the practice was changed into a complete burial, after the fashion introduced by the Spaniards.

Every family had its own burial-place in the general Necropolis, and these were marked out by diminutive toldas, and heaps of baked earthen pots piled on one another, as well as by keeping the particular sites quite free of weeds. Only

the women of a family wept for the dead husband or father during a few successive days ; but if the deceased had been killed by an enemy, all the women in town kept up the wailing night and day for a week.

The Payaguas were expert in swimming, as well as in the management of their canoes ; and never lost their bows, arrows, or fish, by the upsetting of a boat, even in the deepest water.

The Guaicarus lived on the Chaco side of Paraguay River, and subsisted entirely by hunting. From the barbarous custom their women had of inducing abortion, to obviate the pain or trouble of child-bearing, they became, according to De Azara's account, exterminated soon after the so-called Conquest. When he composed his book, he said there was only one man of this tribe alive, a fellow six feet high, and three women, who had incorporated themselves with the Tobas. Yet Alvar Nunez, who wrote some seventy-five or eighty years previous, relates the Guaicarus to contain forty thousand warriors. Of any point in their anthropology, these writers say nothing, and I am rather doubtful whether the philology of other hordes, of whom we can learn little but the names, comes under the consideration of our Society ; because, if it should not, I may be called to order, and shall submit. On the chance, however, of not offending against technical propriety, I shall venture to say that, amongst the races up here, were tribes of Indians with the not very euphonious names of Quiesmagpipo, Cochabot, and Cocoloth ! In his notice of the Cochabots, who were styled Esabostes by the Machicuis and Quimagas by the Spaniards, De Azara tells us, that they made war on a nation called the Guentuse, causing it to be divided into two factions ; one of which, with a quotient of a hundred and fifty families, left the native soil to go live on the banks of a river that flowed through the Gran Chaco, and bore the title of the "Flagmagmegtempela." Such

names as this, with the nomenclatures of a few cities of the Machicuis, namely Cuomoquigmon, Ambinamadimon, Ensegiepop, Quiomomcomel, Quiguailieguaipen, Quiabana-puacsie, Yoteaguaicencue, Sanguotayamoctae, and others equally unpronounceable,—indeed it might be said almost unwriteable,—make one anxious to know something about the *unde derivatum* on which they were formed; whilst, being ignorant of their roots, we may paraphrase Byron, and say, they represent—

“A hoarse, harsh, Indian Southern guttural,
That makes one hiss, and spit, and sputter all.”

The Tobas, who were amongst the best fighters of the Indians, and who had the *aliases* of Vatecoet or Yncanabaite, are now nearly all gone. They occupied the Gran Chaco, north of where in the present time are to be met the pitiful remains of the Mocovis. When I was up at Corrientes, in March of 1866, I saw several groups of Mocovis about the streets,—for they come to this city across the River Parana to sell horse pasture as well as fire-wood,—and it would be impossible for pen or pencil to describe their miserable appearance. They were nearly semi-naked, had no more than half an inch of forehead, hair very long and frowsy, whilst they wandered about the streets like dogs in a time of famine, picking up grains of Indian corn and pieces of rotten fruit or vegetables, which were eaten ravenously at the moment of being found. None of them had a feather in the nose, as Schmidel describes the Mocovis, nor in the lower lip, as De Azara says of the same race. But in their whole aspect they were as far as possible from what the latter depicts them, “unconquerable, haughty, of lofty bearing, aristocratic, and warlike!”

De Azara likewise observes, that their idiom is different from all others, and so difficult, that the Jesuit fathers, after

twenty-five years' endeavours, failed to translate the catechism into it. From what we have seen, a few sentences back, of the Machicuis dialect (some of the words whereof I have transcribed), it may be imagined, that if the Mocovi tongue bore any resemblance to *that*, the Jesuit fathers deserve our sympathy for their twenty-five years of what may be called oakum-picking of philology.

The various Indian hordes in South America are gradually disappearing; but where Jujuy, the most northern province of the Argentine Republic, joins Bolivia, we have, in the present day, the Mataguaya and Cambas Indians. The latter are represented to me, by Doctor Matienzo, of Rosario, as intelligent, and devoted to agricultural labour. They have fixed *tolderias* of small villages, the houses of which are clean and neat. Each town is commanded by a "Capitan," whose sovereignty is hereditary to his male descendants only. They work, as hired labourers, in the sugar-cane *estancias* of Santa Cruz, in Bolivia, as well as at similar establishments in Jujuy and Salta, provinces of the Argentine Republic. These Indians have been considered quite subdued since 1843, when General Ballivian, then President of Bolivia, sent to Chiriguinay (as is styled the country of the Cambas), a military expedition to regulate them. Acknowledging this conquest, they have from that time shewn hospitality to travellers, and are accustomed to ask for certificates of their having done so.

The marriage ceremony of the Cambas is very simple. After a chat round the fire, the materials to make which have to be gathered by the suing swain, the couple set off to live in the woods for three or four days; when they return, as a married pair, with their *status* as such recognised by the *Tolderia*.

The Bolivian Indians are in the present day, what they have always been, the best of messengers. They journey on

foot, and are remarkably expert in their marches, keeping pace with the traveller on a mule. Some have the title of “good walkers,” and are employed by the government to bear official despatches in critical times, on account of their swiftness of foot and well proved fidelity. They have been known to walk at the rate of twenty leagues (*i.e.*, sixty miles) a day, for several days in succession, whilst having no sustenance during the time except some Coca* leaves and a small quantity of ground maize. These journeys they accomplished without the slightest semblance of fatigue.

It is curious to observe what a variety of effects the Jesuit teachings had on different tribes of the Indians. Dean Funes† tells us of a cacique of the Arecaya tribe, named Rodrigo Yaguaragay, a man of fine personal stature, brave, enthusiastic, and withal diplomatic, who wielded such a despotism over his people as to make them adore him for God the Father, his wife for the Virgin Mary, and his daughter for a lesser Holy Mary, the last-named probably a saint of his own canonization. Whilst Monsieur Beck Bernard says, that in the old Church of San Xavier, in the Gran Chaco, the Indians (after its desertion by the priests) had sewed up the Statues of the saints with horse skins, for

* The Coca is the *Erithrosylon Peruviana* of Linnæus. It is a shrub that grows to the height of six feet, and resembles the vine. Its leaves are small, and of a clear green colour; its flowers are white, and produce a red berry. When mature, the leaves fall off the branches at the slightest touch of the hand. Its properties are stimulant, tonic, very nourishing, and slightly narcotic. It has an agreeable aroma, and a taste similar to tea. The natives of the country make an infusion of it, to administer in case of stomach-ache. The longevity of the Indians, who feed on Coca leaf, is proverbial in Peru and Bolivia. Dr. Scrivener has seen hundreds of them, beyond eighty years of age, who had eaten it from their infancy. A powder, which bears the Quichua name of “Lijto,” is mixed with the Coca leaf, when this is being chewed. The powder in question is prepared from boiled potatoes, pounded to a pulp, then burned into ashes, along with the cob or body of a maize head, which gives it a saline flavour.

† Ensayo de la Histeria Civil del Paraguay, Buenos Ayres y Tucuman, escrita por el Doctor Gregorio Funes, Dean de la Santa Iglesia Catedral de Cordova, Vol. St. 3, Buenos Ayres, 1816.

the object of preservation, thus making them resemble so many Egyptian mummies.

But, from all the Jesuit missions in the Gran Chaco, we find no evidences of civilisation, save that the Indians now-a-days, as they have done from all time, prefer horse-flesh to any other kind of meat; thus proving that hippophagy can scarcely be claimed as an original institution by the belles and swells of Paris.

Whilst amongst the Chaco Indians, I wish to give you an account of the peculiar marriage ceremony with the Mocovis. Like the others, it is very simple. The smitten Darby proposes to the father of his intended Joan, for she has no voice nor will in the matter. If the proposal be accepted, the suitor is invited to stop during the night succeeding the offer being made, at the tolda of his bride elect. Next morning he is off to kill or catch alive a deer, ostrich, or wild pig, which he lays at the feet of his lady-love, as a proof that he is expert in the chase, and an assurance that for the material want of eating she is to be ever provided. On his return with the spoil, the girl's mother takes the *recado* and bridle from his horse, to deposit them on the spot where he is expected to construct his tolda or dwelling house, *et voila tout!* On the first night, the newly-wedded pair sleep on a horse's or mare's skin, with their heads towards the west; and their marriage is not considered as perfectly ratified until the sun shines on their feet the following morning.

In case, however, that after-regrets, differences, or distastes should arise (as I believe sometimes occurs even in the best regulated families with us), and the faithless fellow goes wooing elsewhere, there is a much simpler and shorter mode of divorce than that presided over by Sir J. Wilde. The peccant is to be admitted as a member of his new father-in-law's family only on condition that he abandons his first wife altogether. This is, of course, a declaration of war amongst the

families of the two ladies. A council of caciques is summoned, and a single combat between the rival women is ordered, the truant fought for standing by as a spectator, with folded arms, and obliged, according to established law, to take up with whomsoever becomes the victor. Mr. Baines, F. R. G. S., the author of a work on Southern Africa, and who is a capital artist, has sketched an incident of this kind from my description, under the title of "The Divorce Court in the Gran Chaco," and it is probable that you will soon see it published.

But nothing connected with these rivers, during past or present time, has given such an interest to this part of South America as the prolonged war with Paraguay. If you look at the map, you can observe that the geographical extent of Paraguay is but a speck on the chart, when compared with the immense empire of Brazil, and the large territories of the Argentine and Uruguayan Republics. Whenever the history of this war shall be written by an impartial hand, it can reveal a series of romantic episodes, unsurpassed in ancient or modern records, some of which I have chronicled in my last work. As to the proximate cause of the war I can give no explanation, for everybody has a different story to tell; but I think I am not going astray in supposing that national animosity, strengthened by Brazilian pride and Paraguayan ambition, have had a good deal to do, not only with its first outbreak, but with its persistent continuance. That national animosity has had no small share in this war, may be inferred from what we know of the old feuds between the Spanish and Portuguese explorers of their respective parts of South America early in the sixteenth century. When Brazil was discovered, in April, A. D. 1500, by the Portuguese navigator, Pedro Alvarez Cabral, who landed in Bahia, the dominant Indian tribe here was the Guarani. By the early Portuguese discoverers, as well as by the Dutch, who possessed them-

selves, from 1624 to 1654, of the sea coast provinces, from the Maranhao to the San Francisco, many of the Indians were slaughtered, and the survivors driven inland. Then came the Brazilian Mamelukes, of whose doings in Paraguay we have the following expressive narration from Martin Dobrizhoffer;—"The Mamelukes are a set of people, born of Portuguese, Dutch, French, Italians, and Germans cohabiting with Brazilian women, celebrated for skill in shooting and robbing, ready for any daring enterprise, and thence distinguished by the foreign name of Mamelukes. (They were in fact the Bedouins of the desert, or the Roman brigands.) It was their constant custom to carry off the Indians, led by the fathers to the freedom of the children of God, into the hardest slavery. In the space of one hundred and thirty years, ten millions of Indians were slain and carried into captivity by the Mamelukes of Brazil, and more than one thousand leagues of country, as far as the river Amazon, was stripped of its inhabitants. From a letter by the king of Spain in 1639, it appears that in five years, three hundred thousand Paraguayan Indians were carried away into Brazil and sold as slaves."

There is one incident in this war, upon which I desire to touch here. More than a year ago, it was tried to raise a feeling of Christian indignation against Lopez for his reputed attempt to force women into the army. Gentlemen, Lopez is a man for whom I have not the slightest sympathy; I believe he is as much to be blamed for this war as any one else; but I believe there are few Englishmen who have not an admiration for the many incidents of courage unto death that have been shewn by the Paraguayans, men and women, since the war began. Amongst these, none is more remarkable than that of which we read in the Buenos Ayres newspaper, the *Patria*, that "among the dead Paraguayans in the action of the 8th of May last, in the Gran Chaco, was

found an old woman, dressed in man's clothes, shot by the side of a young man also killed, whose head she was holding in her withered hands, and who doubtless was her own son. The latter was clutching his rifle with one arm, and the other twined round the neck of the old woman. The picture must have been a sad and a pathetic one." From several other incidents like this, that came to my knowledge, I am inclined to think that the women who joined the army came as volunteers.

How much the ethnological view of the difference of races has, in my opinion, to do with the perpetual warfare in South America, may be seen by any one consulting the thirty-second chapter of the book which I hold in my hand, my last contribution to the literature of the countries wherewith Her Majesty's government honours me in the connexion, and which I have the pleasure of presenting through you, Sir, to the Library of the Literary and Philosophical Society.

In conclusion, I shall be most happy to answer any questions within my knowledge, whereupon I may not have touched in this paper; for the courteous attention to which I have to return to you, Mr. President, and to you, gentlemen, my best thanks.

THIRD ORDINARY MEETING.

ROYAL INSTITUTION, 16th November, 1868.

J. A. PICTON, F.S.A., VICE-PRESIDENT, in the Chair.

Mr. T. J. Moore brought before the Society the following objects:—

Stuffed specimens of two rare species of tree porcupines, from Bahia, lately presented to the Free Museum by Mr. George Bell, who made some remarks upon their habits.

A collection of fish, crustacea, and insects; made at Port Adelaide, South Australia, by Mr. Edward Phillips, and brought for naming by Mr. T. B. Robson, of New Brighton.

Also some bird-skins, from Tongatabu and the Fiji Islands, collected by Mr. Robson, the most remarkable of which was an imperfect specimen, apparently, of a species of pigeon, with salmon-coloured body and yellowish head, the native name of which was *Buli ndamu*.

Mr. Moore also exhibited a young chameleon, a few days old only, one of a brood born alive, in the possession of Lady Cust, the parents of which had since produced another brood, also born alive; in addition to this, Mr. Moore also exhibited some living chameleons, and an egg just laid by one of them; also a specimen in spirit, showing the eggs *in situ*.

Mr. Higginson also exhibited some chameleon eggs, in illustration of his views thereon.

Mr. T. J. Moore pointed out, what he had no doubt the Society would be pleased to hear, namely, that the volume of the *Report of the Smithsonian Institution* for 1866, copies of which had just arrived, contained a reprint in full of a paper "On Vitality," by the Rev. H. H. Higgins, read before the Society, and printed in their *Proceedings* for 1864; and to which an appendix, supporting Mr. Higgins's views, was added by Dr. Henry, Secretary of the Institution.

The Rev. H. H. Higgins then read a paper on "Science Teaching in Schools," which was followed by a lengthened discussion, in which Messrs. Nevins, Sephton, Birch, and the Chairman took part.

EXTRAORDINARY MEETING.

ROYAL INSTITUTION, 30th November, 1868.

The REV. HENRY H. HIGGINS, M.A., VICE-PRESIDENT,
in the Chair.

The Minutes of the last Extraordinary Meeting having been read and signed,

The Honorary Secretary read the alterations in the laws, as recommended for adoption by the Council.

It was then proposed by Mr. Unwin, and seconded by Mr. Picton, "That the alterations as now read be passed a first time," which was agreed to unanimously.

FOURTH ORDINARY MEETING.

ROYAL INSTITUTION, 30th November, 1868.

The REV. HENRY H. HIGGINS, M.A., VICE-PRESIDENT,
in the Chair.

Mr. Moore exhibited a remarkably fine mass of coral, obtained in six fathoms water, in Annesley Bay, by Captain Donald, ship *Preston*, and presented by him to the Free Museum.

The following paper was then read :

OUR MOTHER TONGUE, AND ITS CONGENERS.

By J. A. PICTON, F.S.A.

THE language in which we habitually speak and think, "our mother tongue," is so essentially identified with ourselves, that it requires some effort of the mind to subject it to examination and analysis. And yet, rightly conceived, there is no inquiry more calculated to throw light on the history of mankind, and the progress of the human faculties. I will not go so far as to maintain, with some philosophers, that language is essential to thought; but undoubtedly, under ordinary circumstances, it is the main vehicle both of reflection and expression, the counters or cyphers, so to speak, with which mental operations are carried out and developed.

When we contemplate the vast variety of languages spoken by the human race, the task of classification and comparison would seem at first sight perfectly hopeless. If, however, we believe that "God hath made of one blood all nations of the earth," or if we only believe that, though diverse in origin, men are born with similar powers and faculties, there must be some means of comparison, some method by which this apparent chaos may be reduced into something like order and harmony.

In ancient times, this question obtained very little attention. Greeks and Romans were so imbued with the vast superiority of their own languages and literature, as scarcely to bestow a thought on those of their so-called barbarous neighbours. The Jews, jealous to the last degree of the purity

of their sacred text, turned with haughty contempt from any association with the profane learning of the Gentiles. After the revival of learning in the fifteenth and sixteenth centuries, scholars began to devote themselves to the philological illustration of the Classical languages. The grammars of Latin, Greek, and Hebrew were subjected to the most searching scrutiny. The texts of the classical writers, and of the sacred books, underwent a long process of verbal criticism, which is still going forward. The department of lexicography was also pursued with great diligence and success. From the classical tongues the inquiry spread to the languages of modern Europe. The lexicographers of the latter part of the seventeenth and the beginning of the eighteenth century have never been surpassed, in scholarship, acuteness, and laborious diligence. The works of Wachter on the German, Ihre on the Scandinavian, Ménage on the French, and Junius, Skinner and Minshew on the English language, will long remain as monuments of vast learning and untiring industry.

These inquirers very soon found, in the course of their labours, that there extended through the different languages of Europe a certain amount of relationship and connexion, even between those apparently the most diverse, for which they found it difficult to account. Various were the conjectures and ingenious the theories propounded to resolve the difficulties. It was a very general belief that the Hebrew was the primeval language, from which all others were derived, and any apparent resemblance in sound was eagerly laid hold of as proof demonstrative of the connexion. Amongst the earnest inquirers who were not led away by visionary speculations of this nature, it was generally held that the several families of language had descended direct from the plains of Shinar, after the confusion of tongues, each in its separate channel; that any resemblance, for

instance, between terms in Latin and German, were not indicative of a common origin, but were importations from one to the other as the case might be. It was the intercourse of Europe with India which first directed inquiry into the right channel.

The study of Sanskrit grammar by the missionaries at Serampore, and the publication of Wilkins's Sanskrit Grammar in 1808, drew the attention of European scholars to the affinities between the Eastern and Western tongues. This was followed up by the works of Prichard in England, and Frederic Schlegel in Germany; and from that time to the present, a succession of eminent men, especially in Germany, have gradually developed the study of comparative philology, until it now takes its place as one of the exact sciences, which, by its power of analytical inquiry, has done much, and promises to do more, towards the elucidation of the origin, progress, and classification of the various languages of the human race.

In a short paper of this kind, I cannot pretend to give any general view of the present state of philological science. I will merely indicate, in a few words, such of the leading points as bear upon my present subject. Professor Max Müller, in a recent lecture on the "Stratification of Language," has presented what may be considered the latest manifesto. All languages are now divided into three classes, corresponding, it is believed, with the different stages of their development—

1. The isolating, or monosyllabic, in which every word tells; where there are no parts of speech properly so called, no inflections. This class is principally represented by the Chinese.

2. The agglutinative. In this class, part of the words have lost their primitive importance, and become subordinate, so as when attached to the principal terms to modify their

meaning. To this class belong the Mongolian and other languages of Central Asia.

3. The inflexional, in which the relation of words to each other is indicated by changes in the words themselves, or by added particles, having no meaning except in such application. To this class belong our own and most of the European languages.

The Aryan, or Indo-European tongues, appear to have had their origin in the north-western plains of India, and thence to have radiated, partially north and south, but principally westward. The main stems from the parent root may be thus summed up. In Asia, the Sanskrit, or sacred language of India, from which the Hindustani and Bengali are descended, and to which the ancient Persian is closely allied. In Europe, the Greek and Latin, from which latter are descended the French, Spanish, Italian, Portuguese, and Wallachian; the Teutonic, divided into the High German, Low German, Swedish, and Danish; the Celtic, in its six divisions of Gaelic, Cymric, Bas-Breton, Cornish, Pictish, and Manx; the Slavonic, represented by the Polish, Russian, Lithuanian, Bohemian, etc. However diverse these various tongues may appear, it is now a firmly established fact that radically they can be traced to a common origin.

The base of our own language belongs to the Teutonic stem, in its Low German subdivision.

The literary languages of Europe at the present day may be fairly limited, in addition to our own, to the French, Italian, and German. It is with these, and with occasional references to the classical tongues, that I propose to institute a comparison.

Let us first glance at the history of our tongue. When our forefathers invaded Britain, at the end of the fifth century, they were divided into three races, the Angles, the Saxons, and the Jutes. The language they spoke was the

same, with dialectic variations. It was closely akin to the Dutch and Flemish, and stood in a relationship by no means remote with the ancient Gothic. Indeed there is reason to believe that the section of the invaders whom we term Jutes, or Geats, and who settled in Hampshire and the Isle of Wight, were in reality Goths.

England was not conquered all at once. Successive swarms from the continent gradually pushed back the native tribes to the west, until they were limited to the moors of Cornwall, and the mountains and valleys of Wales and Cumberland. During the progress of this contest, much intercourse must have taken place of a friendly nature between the hostile races, and much mixture of blood, which could not but leave its influence strongly marked upon the languages spoken by each. Accordingly we find the pure Cymric corrupted by a mixture of Teutonic words, and, on the other hand, a considerable infiltration of Cymric into our own tongue. This element is larger than many would suppose.

“The stoutest assertor of a pure Anglo-Saxon or Norman descent is convicted by the language of his daily life of belonging to a race that partakes largely of Celtic blood. If he calls for his *coat*, or tells of the *basket* of fish he has caught, or the *cart* he employs on his land, or of the *pranks* of his youth, or of the *prancing* of his horse, or declares that he was *happy* when a *gownsmen* at college, or that his servant is *pert*, he is unconsciously maintaining the truth he would deny.”* If we talk of a child’s *brat*, or put our clothes into a *flasket*, or threaten to *whop* a child for *cowering* down; if we speak of *cluttering* together for fear of *boggarts*, or of *licking* a lad for *slattering* water about; if we bake our cakes on a *griddle*, or praise Mary for being so *jimp* in

* Rev. John Davies, *Philosophical Society’s Transactions*, 1855, p. 211.

her attire, we are employing familiar Celtic conversational terms.

From the seventh to the tenth century England was scourged by the ravages of the Danes and Norsemen, who, after much bloodshed and destruction, gradually settled in the country, and formed a considerable part of the population. These tribes spoke a language closely akin to the Anglo-Saxon, but with marked dialectical variations. Wherever they settled, they introduced their own nomenclature, which enables us, with considerable accuracy, to trace their course. The places where they established themselves are generally distinguished by the suffixes of "by," a dwelling; "thorpe," a village; "thwaite," a separated or enclosed area; "how," a hill; "ness," a promontory; "beck," a brook; "dale," a valley, etc. In Lancashire there are about twenty-eight such names, and in Cheshire about twelve. In Leicestershire and some of the eastern counties the Danish names are much more numerous.

The influence of the Danish element on the language of England was not so much in the introduction of new words, as in affecting the pronunciation of the northern district, and breaking down its grammatical system. We owe to the Danes our family names, or patronymics, ending in "son," as Jackson, Thompson, Robinson, etc., which prevail principally in the northern counties colonised by them.

The Norman conquest exercised a very powerful influence on the structure and development of the English language. The conquerors, the descendants of those Danes and Norsemen who in the tenth century founded the Duchy of Normandy, had entirely lost their original Scandinavian tongue and adopted the French. Settling in England as barons and knights, the language of the common people was despised and treated with contempt. Every public document, every private treaty, every conveyance of property was either in

Latin or Norman French. Time, however, brings its revenges. In the end, the tongue of the majority prevailed, but when it again came to the surface, and took its place as the language of England, it was clipped and shorn of its ancient inflexions; enriched doubtless by the infusion of a large number of foreign terms, and fitted to be the vehicle of thought of a race which should combine the qualities of its various component members.

The earliest public document in the English language is a patent roll of the 42nd of Henry III. (A. D. 1258), and, although rude and strange-looking at first sight, it will be found, on examination, to contain all the elements of modern English, as contradistinguished from Anglo-Saxon. Little more than a century after this flourished Gower and Chaucer and Wickliffe, who laid the foundations broad and deep of our modern tongue.

Another century elapsed, and the various editions of the translation of the Bible into the vernacular speech established a standard of reference. Then came Shakespeare, Bacon, and the wonderful galaxy of the Elizabethan and Jacobean period; since which, although changes have taken place, and will still continue, the essential framework of our language has been established on a solid basis for all future time.

Now let us compare this history of our own tongue with that of our neighbours. Our kinsmen of Germany speak a language essentially self-developed. No foreign conquest has ever removed their landmarks. No intrusive barons and knights have condescended to parley with the natives in a *lingua franca*, composed of fragments from both tongues. We see in the modern German the natural results of the expansive powers of the mind, finding utterance in the native element enlarged, and adapted to ever-growing wants. The French and Italian have much the same history. Both are based on the Latin tongue. Both have submitted to a

certain amount of disintegration and reconstruction, having parted with much of their inflexional power, and imbibed from the Celtic and Teutonic some portion of their substance, though comparatively small.

From the history, let us now turn to the substance of our language, the terms which we use as the representatives of the ideas we wish to express. There are in the English language about one hundred thousand words; and in the various cognate tongues many hundred thousands more. These, examined analytically, may all be traced to about five hundred original roots. What a conception this gives us of the power of the human intellect, in its capability of adaptation to circumstances, and in its power of combining and giving expression to ideas as they arise. Confining ourselves at present to our own tongue, if the question were asked, What is the English language? Some would reply, the collection of words we find the dictionary; others, the words employed in our literature; and again others, the words we use in our habitual intercourse with each other. Now as we adopt one or the other of these replies, our estimate of the English language will be greatly modified. If we take the dictionaries as our standard, our own native Anglo-Saxon words will be greatly in a minority. If we examine the works of our best writers, we shall find that the foreign elements of our speech amount to from one-third to one-fourth of the terms employed; but if we take the words used in the ordinary conversation of daily life, we shall see that the native portion vastly preponderates.

Before the conquest, the native tongue sufficed for all the ordinary requirements of society, and a native literature had sprung up and flourished, with little or no foreign admixture. The French element, introduced at the conquest, was first applied to those things in which the foreign seigneurs

were most interested. You will all remember the scene in *Ivanhoe*, between the swineherd and the jester.

"How call you those grunting brutes running about on four legs?" demanded Wamba. "Swine, fool, swine," said the herd; "every fool knows that."

"And swine is good Saxon," said the jester; "but how call you the sow when she is flayed, and drawn and quartered?" "Pork," answered the swineherd. "I am very glad every fool knows that too," said Wamba; "and pork I think is good Norman." "Nay, I can tell you more. There is old alderman Ox continues to hold his Saxon epithet, while he is under the charge of serfs and bondsmen such as thou; but becomes beef, a fiery French gallant, when he arrives before the worshipful jaws that are destined to consume him. Mynheer Calf, too, becomes *monsieur de veau* in like manner; he is Saxon when he requires tendance, and takes a Norman name when he becomes matter of enjoyment."

And so, as the necessities of intercourse required, the lord and the serf contributed their share to the common speech, the proportion of the latter greatly preponderating.

When the language first emerges into literary effort, we find quite as much, or indeed rather more, of the Romance or Franco-Latin element clinging to it than has continued since to adhere. Take the following verse from Chaucer (*Prioress's Tale*), opened at random—

"Lady, thy *bounty*, thy *magnificence*,
 Thy *virtue*, and thy great *humility*,
 These may no tongue *express* in no *science*;
 For sometime, lady, ere men pray to thee,
 Thou goest before in thy *benignity*,
 And gettest us the light in thy *prayer*,
 To guiden us unto thy Son so dear."

Here are, in seven lines, eight words of decidedly Romance

origin. Now let us turn to our most celebrated living poet, Tennyson, and, opening equally at random, let us see what we find,

“ Ring out, wild bells, to the wild sky,
The flying cloud and frosty light,
The year is dying in the night.
Ring out, wild bells, and let him die.

Ring out the old, ring in the new,
Ring, *happy* bells, across the snow;
The year is going, let him go;
Ring out the *false*, ring in the true.”

Now in these two stanzas, with the exception of the terms “*happy*,” which is Celtic, and “*false*,” which is Latin in its origin, there is not a word that is not pure Anglo-Saxon. But this may be considered an exceptional case. Turn over the pages again, equally *ad libitum*;

“ Calm is the morn, without a sound,
Calm as to suit a calmer grief,
And only through the faded leaf
The chesnut pattering to the ground.”

Here every word is purely of native origin.

If we turn to Milton, and the poets contemporary with him, we find a much greater admixture of the Romance element. Take the opening of *Comus*—

“ Before the starry threshold of *Jove's court*
My mansion is; where those *immortal* shapes
Of bright *aërial spirits* live *insphered*
In *regions* mild, of calm and *serene air*,
Above the smoke and stir of this dim spot,
Which men call Earth.”

Here, in four lines, there are ten words derived from the Latin.

Let us now refer to Shakespeare, where we may expect,

irrespective of all questions of derivation and descent, the aptest words to express the noblest ideas. We shall find a happy mixture and blending of the various sources of our language. We open Macbeth :

“I have lived long enough ; my way of life
Is fallen into the sere, the yellow leaf ;
And that which should *accompany* old age,
As *honour*, love, *obedience*, *troops* of friends,
I must not look to have ; but in their stead
Curses, not loud but deep, mouth-*honour*, breath,
Which the *poor* heart would fain *deny*, and dare not.”

In this magnificent passage, consisting of fifty-nine words, seven are of foreign origin, being one-eighth of the whole number. In the passage from Milton, the foreign words are one-fourth of the whole.

Our authorised translation of the Bible is remarkable for the large proportion of Saxon English which it contains. Taking an instance at random, the first ten verses of our Lord's sermon on the mount, contain one hundred and twenty-six words. Of these only ten, less than one-twelfth of the whole, are of foreign derivation. I cannot, whilst referring to the English version of the Bible, forbear quoting the splendid eulogium of Father Newman, the more remarkable as it was uttered after he had withdrawn from the Communion of the Church of England. He says, “It lies on the ear like a music that can never be forgotten, like the sound of church bells, which the convert hardly knows how he can forego. Its felicities often seem to be almost things, rather than mere words. It is part of the national mind, and the anchor of national seriousness. The memory of the dead passes into it. The potent traditions of childhood are stereotyped in its verses. The power of all the griefs and trials of a man is hidden beneath its words. It is the representation of his best moments ; and all that there has been

about him, of soft and gentle and pure and penitent and good, speaks to him for ever out of his English Bible. It is his sacred thing, which doubt has never dimmed and controversy never soiled. In the length and breadth of the land, there is not a Protestant, with one spark of religiousness about him, whose spiritual biography is not in his Saxon Bible."

The facts appear to stand thus. The ordinary course of our daily life, our emotions, our affections, those thoughts which lie about us in our infancy, and continue with us to our latest age, always have found, and still find, expression in our ancient dialect. In addition to this, it must be remembered, that what may be called the vehicular part of our language,—that which gives life and motion to otherwise inert ideas, I mean the particles, the prepositions, conjunctions, adverbs, pronouns, numerals,—are for the most part of native origin. Thus our ordinary speech ever has been, and most likely ever will continue to be, a Teutonic dialect. But when we get beyond this, when we extend our ideas outside the limited circle of our daily wants and our home affections, we are compelled to draw upon the Classical or Romance repertory. We have not a science or a pursuit, of which the elementary terms are not in great part derived from the French or Latin. In our religion, the very word itself is classical. Divinity, theology, conscience, morality, repentance, grace, justification, sanctification, etc., nay, the term "church," and all connected with it, come to us from abroad. So with mental science. Reason, fancy, imagination, matter, spirit are not native terms; and where native terms exist to some extent equivalent, the preference is generally given to those of classical origin.

The reason appears to be this. When the English language emerged from the obscurity into which it had been thrown by the Norman conquest, and, in the fourteenth cen-

ture, began again to be cultivated as a literary tongue, it was found to have lost all power of self-development. As knowledge increased, new ideas required expression, and it was found easier to import terms from the French, ready-made, than painfully to coin them from the existing native material; and so it has continued since. Our language has wonderfully expanded, and is enlarging every year. The solid nucleus at the centre is still as ever Teutonic, but the continually accumulating layers above this, almost entirely consist of foreign deposits.

Hence arises the curious fact, that, in homely tales and stories, German is, to an Englishman, easy to understand, whilst the higher class of German literature, especially its philosophy, is obscure and difficult. With French literature, the reverse is the case. Idiomatic French is puzzling to an Englishman, whilst in its history and philosophy he finds the greater part of the terms already familiar in his own language.

To show the extent to which we make use of foreign derivatives to express philosophical ideas, I will quote a short passage from a recent philosophical writer, of considerable eminence.* He says, “the *alterations of functions* being *necessarily* towards a *re-establishment* of the *equilibrium* (for if not, the *equilibrium* must be *destroyed*, and the life *cease*, either in the *individual* or in the *descendant*) it follows that the *structural alterations directly caused* are *adaptations*; and that the *correlated structural alterations indirectly caused* are the *concomitants* of *adaptation*.” We have here, including particles, fifty-four words, of which twenty-two are of Latin origin; or, if we leave out the connecting particles, which are merely machinery, and limit ourselves to the nouns, verbs, adjectives, and adverbs, which represent

* Mr. Herbert Spencer, *Principles of Biology*, vol. i. p. 271.

the substance and quality of the thoughts, we have actually only seven Anglo-Saxon words to twenty-two Latin. This may be an extreme case, but in all scientific writing an approximation to it is inevitable.

One effect of this admixture is the rich copiousness which it imparts to our tongue. Even when a foreign term has been preferred, it often happens that a word nearly similar, of Teutonic origin, exists with it side by side. Hence arise a great number of synonymes, or what appear at first sight to be such, which give a choice and selection to a writer or speaker, and impart a variety of expression which has a great charm. The compilers of the Prayer Book seem to have felt something like an *embarras des richesses* in the selection of terms, and have accordingly given us many in duplicate, both from the Saxon and Romance side. Thus we have, in the opening exhortation, "acknowledge and confess," "sins and wickednesses," "dissemble and cloke," "humble and lowly," "assemble and meet together," "requisite and necessary;" and, in the confession, "erred and strayed," "devices and desires," etc.

With the other European languages this has not been the case. Occasional importations of foreign terms take place in all languages, but, for the most part, German and French have expanded by clothing their new and enlarged ideas in raiment of native texture.

There is one peculiarity in the substance of our language which may be said to be unique. The Teutonic and Romance, which combine their elements in the English tongue, are both originally derived from the same stem. From both these sources we derive our words in ordinary use. It happens that in some cases we have two classes of words descended from the same original root, one through the Teutonic, the other through the Classical channel. There is, for instance, a large number of words beginning with the

syllable “*gen*,” such as gentle, genial, general, generate, genius, gentile, etc. These can all be traced back, through the Latin and Greek, to a root still existing in Sanskrit, “*jan*,” to produce, to generate. But we have another class of words, closely allied to the former, expanding the same idea ; kin, kind, kindness, king, etc. These can equally be traced to the same root, through the Teutonic channel.

Again, we have a large number of words in which the idea of stability is implied, such as “stand, stead, stamp, standard, stone, stay,” etc. These come to us, through the Anglo-Saxon, from the great Teutonic repertory. We have also a closely allied group of words of Classical origin, “state, station, stable, statue, statute ;” with numberless words in which this radical is found in a slightly changed form, such as con-sti-tute, de-sti-tute, re-stit-ution, etc. Both classes, Teutonic and Classical, can easily be traced to the Sanskrit root, *sthá*, to stand, to be firm, which has been so prolific in its derivatives, that in a recent Aryan dictionary no less than sixty-three pages are filled with the offspring of this single syllable. Surely the current of English speech, fed from two sources both of them so copious, ought to run full and rich and strong.

I now pass on to the form of our language ; I mean the inflexions and arrangements which exist for connecting words together, and so giving definite expression to ideas. All the Aryan tongues have been, at one time or other, highly inflexional ; and the further back we go, the more we find this to be the case. The modern tongues have, by degrees, parted with a large portion of their original inflexions, but none to such an extent as the English. We seem, indeed, almost to have reverted to the agglutinative stage, in which, in place of a change of termination, another word is added to vary the sense. Some writers have classified languages into the synthetical and analytical ; the first

those in which a statement is made, with the ideas in a combined form, leaving the hearer or reader to unfold them; the second, those in which, by means of separate words or particles, the distinct ideas gradually form themselves into a complete whole. Take the following passage from Tacitus as an illustration; "*Ipsos Germanos indigenas crediderim, minimèque aliarum gentium adventibus et hospitibus mixtos.*"* "I am inclined to believe the Germans themselves to be the indigenous inhabitants, and very little mixed up with immigrants and strangers of other nations."

Here, twelve words in Latin require as an equivalent twenty-five words in English. The word "*crediderim*" perhaps illustrates sufficiently what is meant by synthetic, as contradistinguished from analytic, in language. It implies belief, with a certain amount of inclination mixed with doubt, and the particular personality of the actor. This combination, stated in one word, has to be separated when presented to the mind. In the English equivalent, we have first the person, "*I*;" next, the tendency of the mind, "*inclination*;" then, finally, the act itself, "*belief*." The ideas are thus built up, step by step, as it were, into a whole.

Now this synthetic form the English language has almost entirely thrown off. Each idea is presented separately, and put together by the recipient. This gives frequently great force and variety of expression. The English "*I love you*" finds a very fair equivalent in the French "*Je vous aime*," but the endearing phrase, "*I do love you*," is untranslatable. The nearest approach to it is the German, "*Ich liebe dich doch*."

Let us examine the structure of our language in two or three aspects.

* *Germania*, sec. ii.

First, as to our nouns and adjectives. We have thrown off the cumbrous array of inflexional articles, which gives so much trouble in the continental languages. "Der Mann," "die Frau," "das Haus," are, with us, simply the man, the woman, the house. We have reduced the inflexions of nouns to the possessive and the plural. The French have done the same, but, in common with the Germans, they have retained the distinction of genders in the most arbitrary and perplexing way. What is there in the nature of things which should make a dictionary masculine and a grammar feminine, as in French; or an apple masculine and a pear feminine, as in German? In this respect the English language has reached a degree of regularity and simplicity scarcely existing in any other, except the Chinese.

In our verbs, again, we have reduced the changes of termination to the smallest possible number. In this we have gone hand in hand with our German brethren, but I cannot help thinking we possess some advantages. The free use of our auxiliary gives shades of meaning, which certainly appear to be wanting in our sister tongues.

The same remark will apply to our future tenses. The Teutonic languages, when they first emerged from the obscurity of antiquity, had only two tenses, the present and the past. The future was either expressed by the present, or by a circumlocution. So it continued to the close of the Anglo-Saxon period. Our future tense has grown up since the conquest.

The Romance languages, when the Latin became broken and corrupt, lost the old future tenses, so that all the European nations had to construct a future tense about the same time. This was done in several different ways. The French, Italians, and Spaniards adopted the auxiliary "to have," French "chanter-ai," Italian "cantar-o," I have to sing, or I will sing. The High Germans took the substantive verb,

“werden,” to be, or become, “Ich werde singen,” I am to sing, for I will sing. In English we have adopted a variety of forms. “Shall and will” are our formal future tenses, but we also frequently employ the French and German modes. “I am to sing next week,” “I have to sing to-morrow,” “I shall sing at church on Sunday,” “I will sing a hymn,” are all phrases expressing a future intention, with slight shades of meaning, peculiar to the English tongue. Southey says, “They may talk as they will of the dead languages. Our auxiliary verbs give us a power, which the ancients, with all their varieties of mood and inflexion of tense, never could attain.”

We have in English also a power of combining words perhaps to a greater extent than most modern languages. This is a relic of the old Aryan power of agglutination, and exists in the Sanskrit to a greater degree still. Thus, “rathamadyasthas,” “standing in the middle of the chariot,” “chakshurvishayátikrántas,” “passed beyond the range of the eye.”

In Greek we have forms such as λιθό-στρωτος, stone-pavement, οἰκοφύλαξ, house-watcher. In Latin, “manupretium,” workman’s pay; “aurifodina,” gold-mine. In German, “Oberrechnungs-kammer,” high chamber of accounts.

In English we can combine thus :

A bottle,
 A wine bottle,
 A champagne wine bottle,
 A glass champagne wine bottle,
 A quart-glass-champagne-wine bottle,

and so on, as long as the breath will hold out. The French language does not admit of this simple combination of words. The Italians have recently seen the advantage, and are begin-

ning to adopt it, as, for instance, "capo-stazione," station-master, where the French are obliged to employ the circuitous expression, "chef de la gare."

Before quitting the subject of the forms of our language, I would briefly call attention to one instance, as exhibiting the vitality, I might almost say the indestructibility, of certain modes of expression when once adopted. We have in English a very simple method of expressing action, or the actor, by the addition of the termination "er" to the simple base form of the verb; as, "give," "giver;" "do," "doer;" "love," "lover," etc. This is still in active operation, so that if a new verb is at any time introduced, we feel no difficulty in coining a noun of agency out of it. We have a new verb, "to macadamise" a road; the noun "macadamiser" is a perfectly legitimate noun formed therefrom. The same capacity exists in our sister Teutonic tongues; as, in German, "denker," thinker, from "denk" the crude form of "denken," to think; "hörer," hearer, from "hören," to hear, etc. The same power equally existed in Greek and Latin, slightly modified; as, Greek, *δοτης*, giver, from the crude form *δο*; Latin, "amator," lover, from "amo." Hence are derived the corresponding terminations, "eur," or "er," in French, and "or," or "ore," in Italian; "laboureur," "blanchisseur," French; "pittore," "cavalcatore," Italian; etc. In modern French, this power of adaptation has been altogether lost. Where the noun of agency existed in Latin, it is continued in French, as in "facteur," "amateur," &c., and applied in many cases where it is not derived from Latin; as, "fournisseur," furnisher, "foulonnier," fuller. But in modern French, where such a noun of agency does not exist, the language is utterly helpless in applying the old termination, and has to substitute either the present participle, or to use a circumlocution. Thus the verb, "to participate," is common to both English and French (French, "participer"),

derived from Latin. We have formed for ourselves the noun of agency, "participator;" but as it did not exist in this form in Latin, the French employ the participle, "participant." So the verb "forcer" is equally common in French and English. We can use "forcer" as a substantive; the French are obliged to employ the phrase "un qui force." Wherever the termination "er," or "or," is found in English applying to an agent, a verb of action from which it is derived will be found, nearer or more remote. Now apply this to our names for the family relations, father, mother, brother, daughter, sister. We have no verbs at present in the language from which they can have been derived, and yet they are clearly nouns of agency. The clue is to be found in the Sanskrit roots. Thousands of years ago, when the early tribes of the Aryan race fed their flocks on the plains of north-western India, the family relations took their names from the part performed by each in the primitive household. The functions discharged are implied by the names. The father is "the governor;" the mother, "the dealer-out;" the brother, "the helper, the assistant;" the daughter, "the one who milks." And thus not only the names, but the same power of creating terms, has descended through the long night of ages, and over half the world's circumference, and identifies our feelings, our habits, our household relations with the primitive tribes of the earth.

A brief reference may now be made to the English syntax, or the relation of words to each other in the expression of thought. The state of a language, in regard to its forms and inflections, is the determining power in the arrangement of its ideas. Every statement, implying an action, usually consists of three parts; the actor, the action, and the person or thing acted on. This may take either of two forms. The actor may be put in the nominative, and pass on the action through the verb to the recipient, which is put in

what is called the objective case, as “the horse draws the waggon”; or, the recipient may take the nominative case, receiving the action through the verb in the passive form, from the actor, which is then put into a shape, either by a change of termination or by a preposition, to show that the action is thence derived, as “the waggon is drawn by the horse.” However complicated sentences may be, it will be found that this simple principle lies at the base of the whole. In expressing states or existences, there is a slight difference, into which I have not here time to enter, but which is of no consequence to our present purpose.

Now, in an inflexional language, like the Latin, where each word carries its own distinct meaning, it is of little consequence in what order they follow each other.

The expression just quoted, rendered into Latin, may be put in six different ways —

Currum trahit equus,
 Currum equus trahit,
 Trahit currum equus,
 Trahit equus currum,
 Equus trahit currum,
 Equus currum trahit;

whilst, except by a poetical license, which is frequently very ambiguous, we are limited to a single order of words. So far as concerns elegance of expression, and finished beauty of composition, it will be seen at once what a prodigious advantage is gained by the inflexional or synthetic language. A little inversion is permitted in our poetry, but only to a very limited extent. Milton is the most classical of our poets, and tried hard to bend his native tongue into classical forms. How little he succeeded may be seen by a comparison of the opening of the *Paradise Lost* with that of the *Eneid*. Milton begins —

"Of man's first disobedience, and the fruit
 Of that forbidden tree, whose mortal taste
 Brought death into the world, and all our woe,

 Sing, heavenly Muse."—

Here, with the exception of throwing the verb "sing" to the end of the sentence, all the words are in their natural sequence, and might be read without the accents as prose.

Virgil commences—

"Arma virunque cano, Troiæ qui primus ab oris
 Italiam, fato profugus, Lavinaque venit
 Litora, multum ille et terris jactatus et alto
 Vi superum."—

The words translated in the order here given would in English be mere nonsense, but the English of Milton might be translated into Latin, either *verbatim* or in any other arrangement.

The German and Italian languages admit of some inversion in poetical compositions, the French scarcely allows any. As a specimen of Italian, take the following two or three lines from Metastasio, with an English metrical translation—

"Oh come spesso il mondo
 Nel giudicar delira,
 Perchè gli effetti ammira
 Ma la cagion non sa."

"O full of error manifold
 The judgment is of humankind;
 They wonder still at what they find,
 But know not whence it came."

Both the synthetical and analytical methods of syntax are liable to ambiguity, though not in equal degrees. The responses of the oracles in ancient times owed a great proportion of their success to their ambiguous expression.

Thus the reply sent to Pyrrhus, when about to engage in war with the Roman republic, "Aio te Æacida, Romanos vincere posse," may mean either, "Thou, son of Æacus, mayest conquer the Romans," or "Thee, son of Æacus, the Romans may conquer." In our own tongue, we have to eke out the syntax by punctuation and accent; and, even with these, ludicrous mistakes occasionally occur. Thus we read of "a valuable silk umbrella belonging to a gentleman, with a curiously carved head;" and of a ship arriving "with no passengers but Nathan Brown, who owns half the cargo, and the captain's wife." A clergyman, reading in the pulpit the twenty-seventh verse of the thirteenth chapter of 1 Kings, found the pronoun *him* in italics; he accordingly laid what he considered due emphasis thereon, and read it as follows, "And he spake to his sons, saying, Saddle me the ass; and they saddled *him*."

Our sentences usually flow on in a certain definite order; the nominative case, with its adjectives and explanations; the verb, the objective or infinitive, with its subsidiary clauses, all floated along, and life-infused by the particles, the *επεα πτερόεντα*, the winged words, as the Greeks called them, which give motion and definite application to the main terms of the sentence. We like to pick up the ideas as we go along. We have none of the long involved sentences in which the Germans delight, holding the meaning in suspense, line after line, until at the end the spark is struck by the verb, which lightens up the whole train of thought.

I will now say a few words on the pronunciation, prosody, and melody of the English language.

It must be acknowledged that the pronunciation is the weak point of our mother tongue. I am not now speaking of the actual sounds of the language, but of the relation between the signs written and the words spoken. Anything

more chaotic, undefined, and uncertain, it would be difficult to conceive. In most other tongues, a certain intelligible relation exists between writing and speech, so that a learner can at once make a reasonable approximation to the true sound of the language; but in English no such rules exist. Caprice seems to have been the presiding genius in the arrangement, which is about the oddest and most bizarre which could be conceived. When and where the first letter of the alphabet is to be pronounced *ah*, *ai*, or *aw*, we have no rules to decide. The diphthong *ea* is sometimes pronounced *ee*, as in *lead* (verb), sometimes as short *e*, as in *lead* (noun), sometimes like *ai*, as in *bear*; o-u-g-h may be pronounced legitimately in seven different ways; 1, like *ow*, as in "plough"; 2, *uf*, as in "tough"; 3, *off*, as in "cough"; 4, *up*, as in "hiccough"; 5, *oh*, as in "though"; 6, *oo*, as in "through"; 7, *ok*, or guttural *och*, as in "lough."

Our language was not originally in this disorderly condition as to spelling and pronunciation. The Anglo-Saxon had its orthographical rules quite as definite as its sister tongues; but after the Conquest, when the French element began to enter in, what with the English speaking French words with their own accent, and the Normans speaking English words with theirs, and each party writing them down with such freedom as fancy might dictate, a state of orthographical confusion soon grew into existence, which it now seems almost impossible to remedy. English mediæval spelling is so capricious that it is no uncommon thing to find, in the course of a page or two, the same word spelled in three or four different ways. In modern times, confusion arises from a different cause. When a foreign word is introduced into our language, it generally brings its own pronunciation with it, as "*soirée*," "*ennui*," etc. In the course of time, the pronunciation frequently begins to conform to the English mode, without changing the spelling.

The verb "oblige" was formerly pronounced in the French mode, "obleege." A story is told of Sheridan, hearing the word so pronounced by the then Prince of Wales (George IV.), politely requesting His Royal Highness to open his royal jaws a little wider, and say "oblige." Another set of words, also derived from the French, "chivalry," "chivalrous," etc., were formerly pronounced *shivalry*, *shivalrous*, and I believe are still so pronounced across the Atlantic; but amongst ourselves it is now considered the correct thing to pronounce them in the English mode.

Various attempts have been made to remedy this defect; none so persevering as those by Mr. Pitman and his school of phonography.

There is no doubt they have much reason on their side, in attempting to accommodate the written to the spoken language. Professor Max Müller, probably one of the highest living authorities on philological questions, strongly favours a move in that direction. There is, however, something so comical and bizarre in the appearance of the "Fonetic Nuz," as to revolt our prejudices, however unreasonable they may be. All our habits and associations are so entwined about the dear familiar aspect of our Bible, our Prayer Book, our general literature in its old features, that any reform in orthography is almost hopeless.

As to the actual sound and enunciation of our English tongue, we have no reason to feel ashamed. Though not so sonorous as the Greek, nor so dulcet as the Italian when the Tuscan speech falls from a Roman mouth, it is yet capable of very noble effects. Foreigners complain of the hissing sound of the English language, which is to some small extent true. It arises from the possessive case ending in *s*, which is partly shared by the German; from the third person singular of the present having a similar ending; but more especially from nearly the whole of our plurals ending

in the sibilant, which in French is silent. In compensation, however, we have neither the nasal of the French, nor the guttural of the German.

For comparison's sake, I will call attention to a specimen of each. Let us first take a verse from one of the "chansons" of Beranger, "Le Retour dans la Patrie."

"Oui, voila les rives de France,
 Oui, voila le port vaste et sur,
 Voisin des champs où mon enfance
 S'écoula sous un chaume obscur
 France adorée !
 Douce contrée !
 Après vingt ans je te revois ;
 De mon village,
 Je vois la plage,
 Je vois fumer la cime de nos toits.
 Combien mon âme est attendrie !
 Là furent mes premiers amours ;
 Là ma mere m' attend toujours.
 Salut à ma patrie."

In these fourteen lines we have fourteen nasal syllables, a very small proportion, compared with most passages of similar length, but sufficient to give character to the tone of the whole.

I will now give two verses from a well-known ballad of Goethe's, "Der Fischer."

'Das Wasser rauscht', das Wasser schwoll,
 Ein Fischer sass daran,
 Sah nach dem Angel ruhevoll,
 Kühl bis an's Herz hinan.
 Und wie er sitzt, und wie er lauscht,
 Theilt sich die Fluth empor ;
 Aus dem bewegten Wasser rauscht,
 Ein feuchtes Weib hervor.
 'Sie sang zu ihm, sie sprach zu ihm ;
 " Was lockst du meine Brut,

Mit Menschenwitz und Menschenlist
 Hinauf in Todesgluth?
 Ach wüsstest du, wie's Fischlein ist
 So wohligh auf dem Grund,
 Du stiegst herunter wie du bist
 Und würdest erst gesund."

The character of the sounds is formed by the palatals, "schwoll," "rauscht," etc., of which there are eight, and the hard gutturals, "nach," "sich," etc., of which there are six.

Now compare with this a verse or two from "In Memoriam."

"Dip down upon the northern shore,
 O sweet new year, delaying long;
 Thou dost expectant Nature wrong,
 Delaying long, delay no more.

"Bring orchis, bring the fox-glove spire,
 The little speedwell's darling blue,
 Deep tulips dashed with fiery dew,
 Laburnums, dropping wells of fire."

We have here neither nasals nor gutturals. In eight lines we have ten sibilants, whilst in eight of the German lines we have eighteen. In eight of the French lines we have ten sibilants, without reckoning those which are mute.

Or take the fairy song in the "Midsummer Night's Dream," Act ii. Scene 3, where Titania says—

"Come, now, a roundel and a fairy song.
 Sing me now asleep,
 Then to your offices, and let me rest."

SONG.

"Ye spotted snakes with double tongue,
 Thorny hedgehogs, be not seen;
 Newts and blind-worms, do no wrong,
 Come not near our fairy queen.

CHORUS.

"Philomel, with melody,
 Sing in our sweet lullaby,
 Lulla, lulla, lullaby; lulla, lulla, lullaby;
 Never harm, nor spell, nor charm
 Come our lovely lady nigh;
 So good night with lullaby." &c., &c.

Here none but the commonest words are used, many of them with somewhat vulgar associations, and yet what a delicious *morceau* it is. The liquid melody falls upon the ear like a strain of gentle music.

So much, then, for the reproach upon the sound of our language, which I will venture to say is not deserved.

I can only refer, in the briefest possible way, to the prosody, or the metrical character, of our language. Our mother Saxon tongue abounded in poetry, principally of an alliterative character, in which the assonance was at the beginning of the words. This gradually led into the rhyming of the terminations of the lines, which was partly borrowed from the mediæval Latin hymns. When the rhythm demanded by the ear had resulted in the metrical arrangement of the lines, it was found that, as in classical poetry, rhyme could be dispensed with; and hence arose the noblest mould in which English poetry can be cast, that of blank verse. I will not travel over ground with which you are all familiar, as to the various metrical arrangements of English poetry; suffice it to say, that they are all founded upon accent, not on quantity, as was the case with Greek and Latin poetry. We use the terms "short" and "long" for convenience, really meaning accented and unaccentuated syllables. We have, then, a vast variety of forms produced, by the different arrangements of short and long syllables together, and by the various length of the lines. Getting rid of the fetters of rhyme has also opened to English poets

a source of beauty and sublimity, which French poetry, hampered as it is, can never reach.

What a vast variety of beautiful metres and rhythms lie ready to hand, for vehicles of expression, to the poets of England!

First, we have the grandeur of the blank verse, in which Shakespeare and Milton won their never-dying laurels; lines such as —

“After life’s fitful fever, he sleeps well,”

in which the very sound falls on the ear as a perfect embodiment of the thought.

Then comes the solemn stately march of the decasyllabic alternate long and short —

“The curfew tolls the knell of parting day,
The lowing herd winds slowly o’er the lea;” &c.

Then we have the octosyllabic, in which many of our hymns are written —

“Sun of my soul, thou Saviour dear,
It is not night if thou art near;” &c.

And so on, through a variety and range into which it is impossible for me here to enter.

French poetry, I have said, is cramped and fettered by its rhyme, and by its inflexibility of construction; but the German language is a worthy rival in the field of versification. It can range through all the moods of poetical expression, and fully hold its position, with two advantages peculiarly its own; I mean, its facilities for double rhymes, and its greater capacity for the classical hexameter.

The capabilities of the Italian language for poetical composition, I need only allude to. In the hands of Dante, Metastasio, or Tasso, it becomes —

“As musical as is Apollo’s lute.”

We have, however, little cause for complaint. Italian poetry is a thing of the past. That of England is ever renewing its youth, and, without discarding the old, moving forward to fresh triumphs, embodying and etherialising in its bow of promise the fountains of the great deep of human joys and sorrows.

With a few words on the capabilities, and the future, of the English language, I must now conclude.

Less clear and precise than the French, less musical than the Italian, less flexible and sonorous than the Greek and Latin, our mother tongue yet possesses wonderful power. In the hands of Shakespeare, how it runs over every note in the gamut of human experiences, and brings out chords of strength and sweetness from them all. I may allude to the solemn music of Milton, the trumpet tones of Campbell's glorious lyrics, the light gracefulness of Moore, the chivalrous ring of Scott, the moving songs of Burns, redolent of the wild flowers and the meadow, and the weird, dream-like quatrains of Tennyson, which fall upon the ear with such strange mysterious potency.

As the swelling flood of English poetry still rolls along, it ever finds in the language a fitting vehicle for the expression of every phase of human emotion.

In the field of narrative and history we have many styles, and all beautiful, from the plain but effective simplicity of Hume, through the sonorous periods of Johnson, the stately magnificence of Gibbon, to the brilliancy of Macaulay, and the gracefulness of Washington Irving.

As a vehicle for oratory, the English language has special adaptation. Its copiousness and even redundancy of epithets, its simplicity of structure, its variety of forms of expression, and even the shortness of its words, afford great facilities for fluency and force. The Greek language was more flexible, and perhaps could express niceties of distinc-

tion more exactly. The Latin had a marvellous vigour of expression, and power of declamation, but was deficient in sweetness and nicety of discrimination. The French language possesses many specimens of noble oratorical force. The sermons of Massillon, Bossuet, Bourdaloue, and in recent times those of Adolphe Monod and Alexander Vinet, can hardly be surpassed in any language. Of German and Italian oratory few specimens are published.

As regards the expression of wit and humour, our English tongue holds a respectable, if not the first place. The French language, with its sharp, clear, epigrammatic power of expression, is of all modern tongues the best adapted for witty sayings; but for that sort of pleasantry which depends, so to speak, on local colour, on peculiarities, habits of thought and personalities, such as in the *Merry Wives of Windsor* and the *Twelfth Night*, Germany and England may divide the palm between them. The Italians excel in the sly, half-sarcastic humour, which we find in the *Morgante Maggiore* of Pulci, and which has been imitated with such success by Byron, in his *Beppo* and *Don Juan*; and to which we are indebted for much of the spirit which animates the inimitable *Ingoldsby Legends*.

I have thus very feebly and imperfectly run over some of the characteristics of our mother tongue. It is an inheritance of which we may well be proud. Jacob Grimm, one of the very highest authorities, and certainly unprejudiced, thus estimates it. He says — “None of the modern languages has, through the very loss and decay of all phonetic laws, and through the dropping of nearly all inflexions, acquired greater force and vigour than the English: and from the fullness of those vague and indefinite sounds, which may be learned but cannot be taught, it has derived a power of expression, such as has never been at the command of any tongue.

Begotten by a surprising union of the two noblest languages of Europe, the one Teutonic, the other Romanic, it received that wonderfully happy temper and thorough breeding, where the Teutonic supplied the material strength, the Romanic the suppleness and freedom of expression. Nay, the English language, which has borne, not as it were by mere chance, the greatest poet of modern times, — great in his very contrast with ancient classical poetry, I speak, of course, of Shakespeare, — this English language may truly be called a world language, and seems, like England herself, destined to rule over all the corners of the earth. In wealth, wisdom, and strict economy, none of the living languages can vie with it."

This is the testimony of a learned German, who had critically studied all the languages of Europe, living and dead.

Look for a moment at the destinies of the English tongue. At the present moment it is spoken by not many fewer than eighty millions of human beings, but what will it be in another century?

Across the Rocky Mountains, over the vast prairies of the West, it is steadily taking possession, from the Atlantic to the Pacific. Canada, with its wide internal seas, is diffusing it over the north-western wastes. In the islands of the Pacific it has taken root and is flourishing. Australia, in her various settlements, East, West, North and South, owns no speech but that of England. New Zealand, in her beautiful valleys and hills, echoes the Anglo-Saxon greeting. Amongst the numerous islands scattered through the Indian Ocean, the English tongue is the language of commerce; and on the vast continent of India, along with English rule, the English language is slowly, but surely, making its way. Before many generations are past, our

language will be the mother tongue of two hundred millions of people.

For this consummation, the language has long been in a course of preparation by Providence. It is the language of freedom, of progress, of civilisation, of vigorous life and action, and, may I not add, of religion also? How important it is that the literature of a language with such prospects before it should be pure and wholesome! In the future history of the world, English speech and English institutions must play a most important part, contributing, let us hope, to the fulfilment of the designs of Providence;

“That God, who ever lives and loves,
One God, one law, one element,
And one far-off divine event,
To which the whole creation moves.”

EXTRAORDINARY MEETING.

ROYAL INSTITUTION, 14th December, 1868.

J. BIRKBECK NEVINS, M. D., VICE-PRESIDENT,
in the Chair.

The Minutes of the former Extraordinary Meeting having been read, it was moved by the Honorary Treasurer, and seconded by the Rev. H. H. Higgins, and carried unanimously, "That the alterations in the laws be now read a second time, and confirmed."

FIFTH ORDINARY MEETING.

ROYAL INSTITUTION, 14th December, 1868.

J. BIRKBECK NEVINS, M. D., VICE-PRESIDENT,
in the Chair.

Mr. Denis Daley was unanimously elected an Ordinary Member.

Mr. T. J. Moore exhibited a living freshwater fish, brought from the River Plate by Capt Perry (s.s. *Humboldt*), Associate of the Society, a remarkable specimen of the hammer-headed shark, and other fish brought by the same gentleman, and, with many other specimens, presented by him to the Free Public Museum.

Mr. Moore also exhibited a young living specimen of the sturgeon, received during the afternoon from Dr. Hilgendorf, director of the Zoological Gardens at Hamburg, in

exchange for living specimens sent from the Museum for the celebrated aquaria in those gardens.

Mr. Morton exhibited a specimen of meteoric iron, discovered in a mass of greenstone rock in Connemara.

The following paper was then read :

ON METEORS AND METEORIC ASTRONOMY.

BY THE REV. JOHN SEPTON, M. A.,

HEAD MASTER OF THE LIVERPOOL INSTITUTE,
AND LATE FELLOW OF ST. JOHN'S COLLEGE, CAMBRIDGE.

IN a large and important work on Astronomy, published at the beginning of the present century by a distinguished professor * at the University of Cambridge, the subject of meteors is untouched. Meteoric astronomy is, in effect, not simply a work of our own age or time, but almost of our own generation †; and every year sees the addition of facts to our existing knowledge of meteors, and also additions of theory to what is a new chapter in astronomy. It may not be amiss, then, to endeavour to give a succinct recapitulation of what has been observed and thought out; and I trust that the great attention which the star showers of 1866 and 1867 demanded and received from educated men, will be a sufficient apology for my venturing to bring before you a subject, which to this day has hardly found a place in the existing ‡ text-books of astronomy.

There are three different classes of phenomena, which, although at first sight specifically different, must yet astronomically be placed together, under the general head "meteoric." The first of these is the appearance of shooting stars. On a clear moonless night, when the stars appear to be really as the sand of the sea, the star-gazer's

* Rev. S. Vince.

† Chladni, Humboldt, Olmsted, Newton, Schiaparelli, Adams.

‡ Last edition of Herschel's *Outlines* contains an important note, and Lockyer's text-book, 1868, contains *An Account of November Meteors*.

attention is suddenly arrested by what appears to be one of the fixed stars broken forth from its moorings. After rushing across the sky it is again as suddenly lost to view, or it leaves a train to mark its passage for a few seconds only.

The second phenomenon comprised under the general head *meteoric* is the fall of *aerolites*. In the midst of a calm and serene day, a cloud is suddenly formed, is seen at first to move slowly, then more rapidly; there occurs immediately an explosion, and stones are hurled from the cloud in various directions to the earth, which fall often at considerable distances from each other. Similar falls of stones are recorded to have taken place in the midst of storms and tempests of wind and rain*; or, as sometimes happens, a single aerolite, with a rushing noise is seen to bury itself in the earth, to a depth of several feet, and when dug out is found to have a burnt outside crust, and still to possess heat.

The third phenomenon is intermediate between these two. A ball or fiery mass, of as large a diameter as the moon, is seen to pass rapidly over the earth, rarely in broad daylight, most often in the night; and which either entirely disappears, leaving no apparent lasting trace, quite like the ordinary shooting-stars seen in a clear night, or else explodes like the cloud meteors, scattering, or not, aerolites in various directions.

During the past century, meteors of all three kinds have been observed with nicety. The average height at which they first appear is found to be about seventy-three miles†; that at which they disappear, fifty-two miles; whilst the average velocity is found to be thirty-five miles per second.

* *E. g.*, at Birmingham, this year, according to a newspaper paragraph, the end of May.

† R. A. S., Feb., 1865, Report.

In the case, however, of meteors which the explode, their height above the earth at the time of the explosion is found to be very much less than the average; and in many instances their velocity, as might be expected from their passing through a denser atmosphere, is also much less than the average, and has been found perhaps so small* as three miles per second.

The falling of a great meteoric mass at Ægos Potamos, in Thrace,† about B. C. 470, first gave rise to the speculations of the Greek philosophers on meteors. Amongst them we find‡ the Cosmical theories,—

(1) That these masses fell from the sun.§ No doubt the heat which aerolites possess when they arrive at the earth fostered this theory.

(2) That such masses|| come to the earth from the regions of space, being dark heavenly bodies like the moon, but which had long been invisible on account of distance.

To be satisfied with two theories on any subject, was not after the manner of the Greek philosophers. Their speculations produced others, which are called Terrestrial theories.

(1) That meteors were from masses¶ of stone carried up by violent tempests. Anaxagoras of Claz., is said indeed to have held the theory that stars also were so formed; the ambient ether which revolves being fiery and inflaming the rocks carried up.

(2) That meteors were exhalations** from the earth, or an ignition and combustion of air.

The Greeks are thus the parents of almost all the theories about meteors which philosophers have brought forward.

After the revival of learning, and amid the early pro-

* Meteor of March 21, 1676, in Italy.

† See Humboldt. § Diog. Laert.

¶ Plut. *de plac. Philos.* Arist. *Meteor.*

† *Parian Marbles Chron.*

|| Diog. Apoll.

** Plut.

gress of chemical knowledge, the view of meteors which, to within the last hundred years, appeared the most probable to scientific minds, was the one to which the Greek philosophers were the least inclined, viz., that meteors are produced by exhalations from the earth. Kepler,* although he likened shooting-stars and balls of fire to comets, favoured this idea of their production. Dr. Halley, although he pronounced a great fire-ball in July 1686, to be a celestial phenomenon,† yet held generally to the theory that shooting-stars consisted of a train of inflammable vapours extending a vast way through the atmosphere, which, being kindled‡ at one end, displayed the appearance by the fire running along the train to the other end. Other philosophers|| extended this theory to aerolites, by having recourse to the agency of hydrogen gas, which they found in the upper regions of the atmosphere on account of the decomposition of water by the sun. This hydrogen is supposed to dissolve metals, and to carry them in solution with it. Then electricity is so brought to bear on this prepared material in the upper regions, that a complete aerolite is produced, which will fall to the earth by its own weight, and so on. This theory finds, I speak from hearsay, its most complete development in a work on Atmospheric Lithology, by M. Izarn.

The next theory in point of time is that known as Laplace's.§ As certain Greek philosophers held that aerolites proceeded from the sun, so Laplace held that they were projected by volcanoes from the moon. This was evidently his favourite notion, although he thought it not impossible that meteors come to us "from the depths of celestial space." This theory of the lunar origin of meteors occupied for some time the attention of mathematicians at

* *Epit. Astron.*

† *Phil. Trans.*, vol. 29.

‡ *Encyc. Met.*

|| e. g., M. Salverte.

§ Humb., vol. 1, note 69.; *Syst. du Monde* of Laplace.

the end of the last century. They found that, in order to reach the earth from the moon,* a stone would require to be projected with a velocity five or six times that of a cannon ball. They considered that such a velocity is not impossible, and Humboldt asserts that stones have been projected from Teneriffe,† which have had twice the velocity of a cannon ball, according to careful observers. With respect to this theory, there is certainly no reason to doubt that *if* there are volcanoes in the moon, stones may be so projected as to come within the sphere of the earth's attraction, reach the earth immediately, or revolve round it as satellites, and reach the earth after a time. The great objection to it is said to be that it fails to account for the great velocity which aerolites possess when they arrive at the earth. It is not difficult to show that a stone projected from the moon towards the earth, with a velocity of less than one and a-half miles per second, would just come within the influence of the earth's attraction; and from that point it would arrive at the surface of the earth with a velocity of about six miles per second, if we neglect the resistance of the atmosphere. In other words, it would possess no more than one-third or one-fourth of the velocity which meteors possess. But, inasmuch as we are totally ignorant of the powers at work in the moon, we can hardly consider this to be a sufficient objection. A stronger argument appears to be that the diminution of the mass of the moon would become perceptible. The mean number of meteors which are visible to an ordinary observer, without including in our reckoning extraordinary falls, is said‡ to be five or six per hour; and from this it is easy to calculate that the number which must daily pass through the earth's atmosphere must be reckoned by millions; so that, however mathematically possible it

* Laplace, Poisson.

† Vol. i., note 69.

‡ Olbers.

may be that stones projected from the moon should reach the earth, it is hardly possible for us to consider the moon as the origin of *all* the meteors.

It is not difficult to see that each of these theories has been formed to explain specially some one of the class of meteoric phenomena, rather than all; so that a philosopher might hold to more than one theory, according as he wished to explain one or other of the phenomena. The latest and most approved theory is simply a modification of one of the old Greek opinions. It is, "that meteors, be they shooting-stars, aerolites, or fire-balls, come to the earth wholly from without, and are bodies, like planets and comets, each describing its own orbit round the sun." This is Chladni's hypothesis, and is now almost universally held by astronomers and philosophers, although received with but little acclamation when published at the end of last century.*

On the early morning of the 13th November, 1833, there appeared such an immense fall of meteors in the United States, that observers about Boston likened the phenomenon to the fall of snow-flakes. To the American philosophers, this immediately recalled the similar display which had taken place in America just thirty-four years before, and which was observed by Humboldt, then at Cumana. When Denison Olmsted compared the different accounts of the fall of 1833 as seen in various parts of America, he discovered the fact, that the meteors during the whole time of the phenomenon, and at whatever place it was seen, appeared to proceed from a point near the star γ Leonis; and this was the case not merely when the star was just above the horizon, but it continued to be the same point of departure after the star had been several hours above the horizon. This, shewing that the phenomenon was independent of the

* 1794. Chladni, on the origin of various masses of native iron, particularly that found by Pallas in Siberia.

earth's rotation, compelled philosophers to believe that "meteors come to the earth from without, and therefore, being subject to the same laws of gravitation as the earth itself, must each of them, like the earth itself, be describing its own orbit round the sun or some other centre of force."

As the November stream forms by far the most interesting exhibition of meteors, it will not be out of place to describe it fully: The facts then which are observed of the November meteors are—

(1) That the stream consists of innumerable meteors, whose paths appear to proceed from one point in the heavens. In 1866, this point was in the constellation Leo; longitude about $142^{\circ} 20'$, and latitude $10^{\circ} 16'$; and was very nearly the point towards which the earth's course was directed at the time of the appearance.

(2) That although meteors are seen every year about the 12th or 13th November, yet that grand displays take place only at intervals of thirty-three or thirty-four years, and are then seen two or three years consecutively.

(3) That the earth is farther advanced in its yearly course in the ecliptic, each time it meets the meteors, than it was the year before.

(4) That the stream of meteors at the display in 1866 was met with at the observatory at Cape Town about fourteen or fifteen minutes before it was met with at Greenwich.

From these observed facts, it has been determined that the orbit in which the meteors move round the sun is an elongated ellipse, which is inclined at about 17° to the plane of the ecliptic; that the line of nodes at present corresponds with the earth's radius vector about the 13th November; that this ellipse will be described by the meteors in the period of about thirty-three and a quarter years; that, the perihelion of the orbit being about the earth's distance from

the sun, the aphelion is about the distance of Uranus from the sun ; that if this orbit be supposed to be figured by an elliptic ring, the meteors will be seen to be crowded together in one small portion of it, rather than distributed throughout its whole length ; and that their motion is retrograde.

Now inasmuch as we cannot trace the progress of one separate meteor through the heavens, obtaining its position by measurements at successive times, so as to deduce the orbit it moves in, like as we do in the case of a new planet or comet, I proceed to show how the various observed facts mentioned above enable us to fix the orbit.

As soon as astronomers suspected that the November shower of meteors was periodical, they immediately began to search amongst old records for references to the appearance of meteors. Of these there are many. The ancient writers record various falls of stones, but these records are no more definite in point of date than is the fall of stones mentioned in the book of Joshua. They were looked upon as religious events, and the larger stones were preserved and regarded with sacred awe, as "the image which fell down from Jupiter." The Chinese astronomers, however, have left various valuable and definite records of showers of meteors, as well as of solitary fireballs. The researches into European astronomical records have been fruitless ; but the silence of astronomers is compensated by the writings of the monkish chroniclers of events in the middle ages, who, looking upon these marvellous phenomena, either as prognostications of the future will of heaven, or as marking its anger for past events, have superstitiously recorded them, and in some instances have endeavoured to trace their supposed effects. Some of these records are very curious. I select from Professor Newton's

*Extracts** the following one as an example, both for its peculiarity, and also because the appearance it records is the earliest notice we have of the November stream. In the *Chronicon Salernitanum* we read, "Anno igitur ab incarnatione Domini," etc. I give a short and free translation. "In the 902d year of our Lord, on the 13th of October, there occurred through the whole world a terrible wonder in the sky. Stars, in dense numbers, from cockcrow to sunrise were seen to rush through the air like long spears against every point of heaven. The minds of men were terrified. No man could remember the like, nor does history relate such another marvellous portent. It was at this time that the King of Africa, desiring to invade Italy, crossed over into Sicily and took Tauromenium; and there, when he could not bend them to his will, he took many Christians, with Procopius their bishop, and his clergy, and, shutting them up in a church, burnt it with fire. Afterwards crossing into Italy, he was besieging Consentia, when, on the very night on which the aforesaid portent of the stars appeared, he perished, struck by a sword from heaven. His army, terrified, attempting to return to Africa, almost all perished by shipwreck, and so, by the mercy of God most high, Italy was saved. Some have wished to say that the wonder of the stars was to mark his death; rather, inasmuch as it appeared not in Italy only, but in all the world, must we believe that it was the fulfilment of the prophecy, 'There shall be signs in the sun and in the moon and in the stars,' and that God did not show signs through the world to mark the death of a wicked king."

Several catalogues of star showers and aerolites have, during the present century, been formed, by collecting the

* *Silliman's Journal.*

various notices of the appearances scattered through the chronicles and histories, by Quetelet, Chasles, Biot, Herrick, and others. Professor Newton has selected those notices which appear to refer to the November stream. He gives the dates of the appearances to be—

	A. D.	DAY AND HOUR.
1.	902	Oct. 12, 17.
2.	931	„ 14, 10.
3.	934	„ 13, 17.
4.	1002	„ 14, 10.
5.	1101	„ 16, 17.
6.	1202	„ 18, 14.
7.	1366	„ 22, 17.
8.	1533	„ 24, 14.
9.	1602	„ 27, 10.
10.	1698	Nov. 8, 17, N. S.
11.	1799	„ 11, 21.
12.	1832	„ 12, 16.
13.	1833	„ 12, 22.
14.	1866	„ 13, 13.

From this table it is at once evident that the apparent cycle of thirty-three or thirty-four years, which in our own times we have observed, from 1799 to 1866, runs through the whole series. If we then assume this as a rough approximation, we shall have, for the length of the cycle, $\frac{1867-902}{29} = \text{about } 33\frac{1}{4} \text{ years.}$

Now the simple fact of the recurrence of the phenomenon of the November meteors on a grand scale every thirty-three and a quarter years, gives us no exact information as to the magnitude of the orbit in which they revolve. For it is evident that the phenomenon would appear if the meteors described —

1 revolution in about 33 years.		
2 revolutions	„	„
4 revolutions	„	„
.		
32 revolutions	„	„
34 revolutions	„	„

Now the two of these which are more readily suggested by the phenomenon than the others, viz.,

- (1) 1 revolution in about 33 years,
 - (2) 32 or 34 revolutions „
- (i. e., one revolution in about a year),

are the only two which have engaged the attention of astronomers; because the solution of the problem, “What orbit do the meteors revolve in?” has been, and, as far as our present mathematical knowledge extends, can be attempted in only a tentative way. That is, we assume the orbit, as it seems apparently to be, one in which a body revolves round the sun in a period of about a year (something less or something more), and examine whether that orbit fulfils all the conditions which the observed facts impose. If the meteors made thirty-four revolutions in thirty-three years, the ellipse in which they revolve would be an ellipse nearly like that in which the earth revolves,—that is almost a circle,—and with nearly the same mean distance from the sun as the earth has. Such an ellipse is certainly suggested by the observed fact, that, when the meteors and the earth meet, they are moving very nearly at right angles to the radius vector, which would be true at all points of a nearly circular course, but is true at only two points of the course in an elongated ellipse. This nearly circular ellipse of period three hundred and fifty-four days is the ellipse which Professor Newton, in *Silliman’s Journal*, has assumed to be

the orbit, and, in his most elaborate and excellent papers on the November meteors, has defended by all the arguments he could find. But there is one of the conditions which the observed facts impose which it does not fulfil.

You will all remember that the grand display of 1866 took place after midnight of the 13th November, whilst that of 1833 took place after midnight of 12th November, and that of 1799, as recorded by Humboldt, after midnight of 11th November. In other words, at each grand display the earth meets the orbit of the meteors about one day later than at the previous display. And what is true of the last three displays, is true of all the displays which have been recorded. The first one, of which I read the account, is said to have occurred on the third day before the Ides of October, *i. e.*, the 13th October, *o. s.*, or what would have been 18th October, if the new style had existed; whilst the last one, of 1866, took place on the 14th November, and both of them nearly at the same time of the day. That is to say, the 30th display took place twenty-seven days further on in the year than the first; this would give approximately for the progression of the nodes during one period of thirty-three and a quarter years—

$$\frac{27}{29} \text{ of } \frac{360^\circ}{365\frac{1}{4}} \times 60 \text{ minutes} = 55\frac{1}{2} \text{ minutes.}$$

This is measured from the moveable equinox which retrogrades; thus, the motion of the nodes is $(55\frac{1}{2}' - 28')$, or $27\frac{1}{2}'$ from a fixed equinox.

Now this movement of the nodes of the orbit is due to the attraction of the various planets on the meteors. If the orbit of the meteors were nearly circular, and of a period nearly equal to that of the earth, the action of the planets on the orbit of the meteors would be nearly equal to their action on the earth's orbit; that is, Jupiter would produce an annual motion of about $7''$, Venus about $5''$. To these

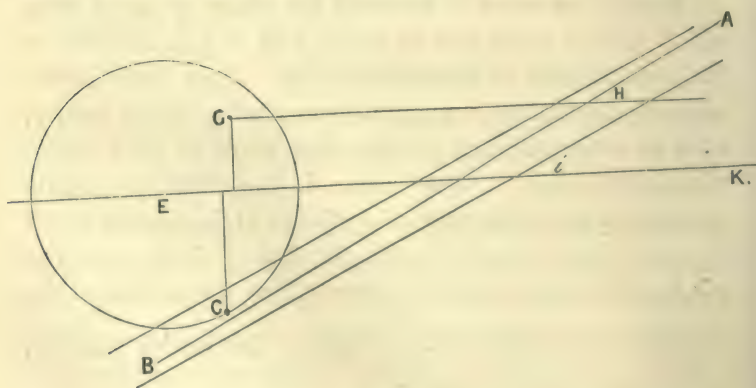
must be added the motion produced by the earth, which Professor Adams estimates at approximately $10''$, whilst the other planets would produce but little result. These make $22''$ annually, or about $12'$ in a period of thirty-three and a quarter years instead of $27\frac{1}{2}'$, which is the observed motion. Therefore the observed motion is irreconcilable with a short period of revolution of the meteors.

It is, in fact, this large motion of the nodes which compels us to examine if an ellipse of larger period would not fulfil all the conditions required. Let us suppose, then, that the meteors revolve round the earth in a period of thirty-three and a quarter years, what effect would the planets then have on such an orbit? Professor Adams has estimated that Jupiter would produce a motion of $20'$ in thirty-three and a quarter years, Saturn of $7'$, Uranus of $1'$, and the other planets but a small effect; that is a motion of $28'$. In other words, the calculated motion of the nodes in such a large ellipse agrees with the observed motion of the nodes of the orbit of the meteors. I need not say that this argument virtually settles the question in favour of the ellipse of long period.

Another argument in favour of the ellipse of thirty-three and a quarter years may be drawn from a fact observed at the great display of November, 1866. If we could obtain accurate observations of many meteors during such a display, so as to determine their velocity, that would at once decide what is the period of their orbit. If the orbit were nearly the same as that of the earth, the velocity of the meteors would be nearly equal to that of the earth, that is about $18\frac{1}{2}$ miles per second, whereas in the larger ellipse the velocity at the earth's distance would be $\sqrt{\frac{58}{31}}$ times the earth's velocity, or about 25 miles per second.

However, as this has not been done, and probably could

not be done on account of the uncertainty which would arise whether observers at different points had really observed the same particular meteors, we may yet obtain their velocity approximately in another way. At the time of the display, observers, wherever found, were occupied in counting how many meteors they saw in each consecutive minute. These numbers will, of course, bear comparison with one another. But there is this peculiarity which Mr. Forbes of St. Andrews first noticed. If we examine the numbers of meteors seen in successive minutes at Greenwich and at Cape Town, it will be found that, be they large or small, each number in the one case is represented faithfully by its fellow in the other, but with a difference of time. In other words, if a great outburst occurred at Cape Town at any time, a similar outburst occurred at Greenwich 15 minutes after that time. If a lull occurred at Cape Town, then 15 minutes afterwards a corresponding lull occurred at Greenwich; and on comparing the observations, it is thus found that each great outburst, or medium outburst, or comparative lull, is represented in the Greenwich observations, but at a time 15 minutes later. How is this?



Let E represent the earth; G, Greenwich; C, Cape Town; EK, the earth's way in the ecliptic. Let the orbit

of the meteors be inclined at an angle i to the ecliptic, and let A B be a band or stream proceeding from A to B; the observer at Cape Town will be immersed in the band A B before the observer at G, and the difference of the times will be, the time which the earth takes to move along G H, that is to say, 15 minutes. But as we know the earth's velocity, this will enable us to find G H, or the inclination i , and when this real inclination is known, then as we know also the apparent inclination from the observed latitude, we can determine the velocity of the meteors. The steps are as follows:—

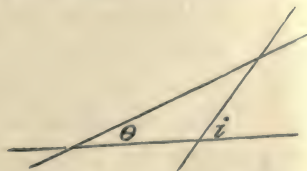
(1). If perpendicular planes be dropped from C and G on the earth's way at one o'clock on the morning of the 14th November, we find the distance between these planes to be 140·8 miles.

(2). If through G and C we draw planes parallel to the ecliptic, the distance of these planes from one another at the same time, one o'clock morning of November 14, we find to be 5239 miles, assuming the radius of the earth to be 3956 miles, the longitude of the earth's way to be $142^{\circ} 26'$, the inclination of the equator to the ecliptic $23\frac{1}{2}^{\circ}$, the latitude of Greenwich $51\frac{1}{2}^{\circ}$ N., the latitude of Cape Town to be $33\frac{1}{2}^{\circ}$ S., and longitude $18\frac{1}{2}^{\circ}$ E.

(3). Hence the velocity of the earth being 1093 miles per minute, we have

$$\frac{141 + 15 \times 1093}{5239} = \text{Cot. } i = 3\cdot156 \therefore i = 17^{\circ} 35'$$

(4). If θ be the apparent inclination of the orbit, i the



real inclination to the plane of the ecliptic, we have

$$\frac{\text{Sin. } \theta}{\text{Sin. } (i - \theta)} = \frac{\text{velocity of meteors.}}{\text{velocity of the earth.}}$$

$$\therefore \text{ratio of velocities} = \frac{\text{Sin. } 10^{\circ} 16'}{\text{Sin. } 7^{\circ} 19'} = 1.4.$$

That is to say, the velocity of the meteors is 1.4 times the earth's velocity, at the instant when they meet, and therefore the ellipse in which the meteors revolve is the elongated one of thirty-three and a quarter years.

If, however, we were to suppose the meteors to revolve in the smaller ellipse, and then calculate the difference of time at which the outbursts occur at Cape Town and Greenwich, we should find it to be about 12.8 minutes; the difference between this and 15 is not so great perhaps as to make this argument a crucial test between the two ellipses, unless arrangements had been made beforehand to conduct the observations with such nicety as to give confidence in the results.

Assuming the orbit of thirty-three and a quarter years and the inclination as just determined, we can, from the observed longitude of the radiant point, calculate the other elements of the orbit.

If the meteors were distributed equally along their orbit, we should have a display every year. They are, therefore, so crowded together as to occupy a comparatively small portion. Still even in that portion it is impossible to suppose them to form a continuous band, or a series of parallel bands. For, as the period of the meteors is thirty-three and a quarter years, whereas the earth meets their orbit at the close of an exact multiple of years; therefore, at the time of any grand display, the meteors which formed the grand display of thirty-three years before must still be distant from the nodes a quarter of a year. If then the stream forms one continuous band, and we have just seen the thirtieth display, reckoning from that of A. D. 902, the band must be at least 30 times

$\frac{1}{4}$, or seven and a-half years, in passing the nodes. In other words, if the band were continuous, then in the early times of the appearance of the phenomenon, it must have been visible for seven or eight years in succession. I need not say we have no record of such visitations, the meteors were visible in A. D. 931, and again in A. D. 934, and this is the longest interval in the early records. We must, therefore, assume that there are several bands in and about the same parts of the orbit. One thing can be said, if a display occur in any two consecutive years, and proceed from the same band as perhaps in 1866 and 1867, then there will be displays from the same band for the next four returns, that is, for one hundred and thirty-three years, if the perturbations of the earth's radius vector do not interfere. It is remarkable, that at the last return but one, viz., in 1833, there were displays for nine consecutive years* (though some were of minor importance), viz., from 1831 to 1839 inclusive.

It is to be noticed also, that as the last great shower lasted for five hours, therefore the thickness of the band must be at least

$$\begin{aligned} & 5 \times 60 \times 1093 \times \text{Sin. } i. \\ & = \text{Sin. } i \times 327900 \text{ miles in thickness,} \\ & = 100000 \text{ miles nearly.} \end{aligned}$$

A second remarkable periodical fall of shooting-stars is that which appears on the night of the 10th August, and therefore called St. Lawrence's tears. As I have treated at great length of the November stream, a few words will here suffice. The August meteors appear every year, and in about the same numbers. If, therefore, they form a ring as the November stream, they must be evenly distributed

* Humboldt, vol. 3, note 699.

along the ring. Their point of radiation is at present* in the head of Perseus. Their motion is retrograde, and the inclination of their orbit to the plane of the ecliptic is very large. Assuming that they move in a parabolic orbit, its elements have been calculated, and strangely enough both the August and November meteors (and perhaps also other streams) appear to be attended by at least one comet. The Comet II. of the year 1862,† which passed its perihelion on 22nd August, and whose period is said to be one hundred and twenty-three years, has the elements of its orbit closely coincident with those of the August meteors. The comet known as Comet I, 1866, which passed its perihelion on January 11th, has the elements of its orbit closely coincident with those of the November stream;‡ its motion is retrograde, its period has been calculated to be thirty-three years and two months; and the existence of this comet is by analogy supposed to be an additional argument in favour of the large ellipse in the case of the November meteors.

Both these streams of meteors on the occasion of their displays are often attended by an appearance of the Aurora Borealis, and it has been remarked,§ that the lines of direction of the meteors fall within the Aurora. When at Llandudno this year, and watching the fall of variously coloured meteors on the 10th August, I was struck by the great brilliancy of the display of the Aurora. It would appear as if the meteors, in their passage through the upper regions of the atmosphere, disturbed the electrical equilibrium (if we may suppose the Aurora electrical), and so produced the phenomenon.

Since the discovery, in 1833, that the November meteors proceeded from a radiant point, the attention of astronomers

* R. A. S., Feb., 1867, Sig. Schiaparelli. † Schiaparelli.

‡ R. A. S., April, 1867, Dr. Oppolzer. § Humboldt, vol. 3, from Olbers.

has been specially directed to the discovery of such radiant points of meteors.* Fifty-six of these are said to have been discovered, and from many of them periodical falls occur. These happen in most months of the year, but it has been noticed that they are the rarest† in January, February and March.

If, on further examination, only a portion of these suspected radiant points prove to be real ones, and give rise year by year to periodical falls, it is impossible to consider without surprise the great enlargement of the planetary world which meteoric astronomy presents. To some extent our surprise has been forestalled, for the large number of 'pocket planets' discovered between the orbits of Mars and Jupiter, must suggest the existence of very many more, which our best telescopes are yet unable to discover. But every one of these radiant points shows the existence of a meteoric elliptic ring similar to the August and November rings; and every one of these rings, and the millions of small planets which compose them, would have remained completely unknown to us, if their orbits had not intersected that of the earth. If, to this, we consider the millions of meteors, which appear to be in no way connected with each other as far as their orbits are concerned, and which come daily in contact with the earth's atmosphere; we must come to the conclusion, that the portion of space in which the earth's orbit lies is crowded with matter, and as there is no reason why this portion should be thus so crowded rather than any other, then the solar system, instead of consisting of the few planets which the naked eye and the telescope discover, consists of untold myriads of bodies whose orbits interlace each other in all directions. ‡

* Report of the B. Ass., 1865.

† Humboldt, vol. 3, from Heis.

‡ For an account of the meteoric theory of the zodiacal light and of the sun's heat, see Professor Tyndall's "Heat as a mode of Motion."

When shooting-stars strike across the heavens, the attention of the observer is arrested by the differences apparent in them. They vary in colour, being some white, others orange or red, and rarely green or blue,* and many leave behind them a train which may last for seconds, or even minutes, quite detached from the meteor, and so unlike the tail of a comet. I have already mentioned the average height at which meteors become visible to us; the November meteors become visible, it is computed,† at from fifteen to twenty miles higher on the average than ordinary meteors. And when we are asked what can make a meteor visible, we answer, 'If it is not self luminous (and perhaps analogy is against that), if it does not shine by reflected light (and they seem to be too brilliant for that), it can only be by their combustion, heat being first obtained by the diminution of their mechanical motion, as they pass through the atmosphere, a resisting medium.' It would appear that the November meteors consist, therefore, of more inflammable matter, or less dense, than ordinary. Perhaps some day the spectroscope may enlighten us on this point, but as the fact stands it seems to be another argument in favour of the large ellipse, demonstrating the affinity of the November meteors with the outer and less dense planets, Jupiter, Saturn, and Uranus, rather than with the inner and denser ones, Mars, the Earth, and Venus. This, however, is but conjecture, it is not impossible but that many shooting-stars consist of matter such as the earth is; and passing through the earth's atmosphere are reduced by the immense heat which the loss of motion generates, into powder; and that this powder still in a state of heat forms the train we see. We can hardly, however, suppose that all meteors, and especially the showers visible at the great displays, have their motion thus

* Humboldt, vol. 3, from Schmidt. R. A. S., Dec., 1866.

+ Professor Newton, Am. J. Sci., No. 119.

entirely destroyed, and become reduced to impalpable nothings. Many must pass through the atmosphere, become free from the earth's attraction, and pursue a much altered course round the sun.

We have no records of any visit of the November meteors before A. D. 902. This may have been their first visit; in the very same manner in which they now meet the earth and are dispersed by it, they may have had their motion changed by one of the outer planets, Saturn or Uranus, and their orbit materially changed. It is not improbable that the earth has thus, during past ages, broken up to some extent the August and other periodical streams of meteors.

Aerolites, the second class of meteoric phenomena, do not leave us in doubt either as to their future destination or their composition. Their destination is to be scanned by curious eyes, in museums and private collections of curiosities. Of the millions of meteors which daily pass through the earth's atmosphere, but comparatively few reach the earth in the form of aerolites. There are about two hundred* in the British Museum, as many in Vienna, and nearly as many in Paris, whilst most local museums contain one or two specimens, and these must be considered as the collection of many years. Of the various falls of aerolites, none is so interesting as that which happened in France on April 26, 1803. We are apt to look with suspicion upon tales about the raining of stones, frogs and blood, or about flaming swords in the air; but when this fall of aerolites took place, the French government wisely sent the philosopher Biot, to the scene to examine the account.† At Alençon, at one p. m., a large ball of fire was seen moving from SE to NW in a clear sky. A few moments later, at Aigle, an explosion lasting five or six minutes was heard in a

* A. S. Herschel, R. A. S., March, 1865.

† Humboldt, vol. 3.

dark almost motionless cloud; it was followed by three or four detonations like cannon shots, and at each explosion some of the vapours forming the dark cloud were seen to float away. No luminous phenomena were perceived. At the same time there fell to the ground, in the form of an ellipse, whose major axis was five miles from S E to N W, many meteoric stones, of which the largest weighed seventeen and a-half pounds. The stones were hot, but not red hot, smoked sensibly, and were more easily broken at first than some days afterwards. Such is the account.

It is remarkable that the great majority of meteoric stones bear a certain similarity to each other; not simply in appearance, though commonly they have a burnt crust, as if they had been subjected to a great heat for a short time; but also in chemical composition; and this similarity consists in the large per-centage of iron which is commonly found in them. It is hardly necessary to suggest that this seems to afford us a clue to the composition of our own earth, which has much puzzled philosophers. The mean density of the earth is five and a half times that of water, whereas that of its heaviest rocks is barely three. Do not the aerolites suggest, then, and with some probability, that the large density of the earth is due to vast quantities of iron, or other heavy metal, stored up within it?

Some meteors also contain magnetic iron, as, for instance, the meteor, or fire-ball, which was seen in France on the 14th May, 1864, and which, on explosion, threw many stones about Orgueil. This presence of magnetic iron gives plausibility to the old theory that the earth's magnetism may be due, to some extent, to masses of magnetic iron, rather than, as is commonly supposed, that certain masses of iron, on account of their position in the earth's crust, become magnetic through the action of the earth's magnetism.

One or two instances* of persons being killed by the fall of aerolites are recorded. Such must of necessity be rare. The probability against it is at least 3,000,000 to 1, in the case of any particular meteor. Instances† have also occurred of houses being set on fire by shooting stars, or fire-balls.

Of this third class of meteors, the fire-balls, inasmuch as they partake of the features of the other two classes, there is little to say. They add nothing to the astronomy of meteors. They come very near the earth, and consequently their velocity is much diminished in the denser atmosphere. The great heat they are then subjected to either burns up the materials they are composed of, or causes them to explode, when stones are often precipitated to the earth, or the fire-balls are reduced to powder. Of the interesting accounts of fire-balls, I select one:—‡ “A very extraordinary meteor, which the common people called a flaming sword, was first seen at Leeds in Yorkshire, on the 18th of May, 1710, at a quarter after ten at night. Its direction was from south to north. It was broad at one end, and small at the other, and was described by the spectators as resembling a trumpet moving with the broad end foremost. The light was so sudden and bright that they were startled by seeing their own shadows, when neither sun nor moon shone upon them. The meteor was in its course seen in the counties of York, Lancaster, Nottingham, and Derby; yet each of those who observed it, although so many miles asunder, fancied it fell within a few yards of him. In disappearing it presented bright sparklings at the small end.”

At various periods in the history of the world, fears have been felt lest at any time some wandering comet in its eccentric progress should strike the earth, and overwhelm

* Humboldt, vol. i., note 69. † Ibid., vol. iii., p. 436.

‡ Dr. Shaw's N. D., vol. i.

the inhabitants thereof in a destruction to which the fatality of an earthquake would afford no comparison. The fate of most meteors which come within the earth's attraction is sufficient to reassure us that we possess a marvellous shield and defence in the atmosphere. Ordinarily, when a meteor strikes into the atmosphere its motion is destroyed, and the meteor itself is burnt up by the heat arising from loss of motion; or else, it is turned aside with the same ease that a pond of water will urge back again and again the stone which a schoolboy skims along its surface.

SIXTH ORDINARY MEETING.

ROYAL INSTITUTION, 11th January, 1869.

THE REV. CHRISTIAN D. GINSBURG, LL.D, PRESIDENT,
in the Chair.

The preliminary business having been disposed of,

The Chairman proceeded to give a short account of his recent tour on the Continent. He had been away about eight months. The object of his tour was chiefly to examine the MSS. in the various libraries of Europe connected with the original of the Old Testament, of which, as soon as he had finished his labours, he was about to publish a critical text. He had deciphered several pages of the MSS. he had copied, and it was only just that he should acknowledge the very great kindness he had received from the various governments of Europe, in their permitting him to have free access to all the public libraries; kindness which he was sorry to say the regulations of our own government, as well as the Universities, did not enable us to reciprocate. As an instance of this he mentioned that, the day after he arrived at Hallé, the Minister of the Interior brought a MS. to him, which in England would not have been allowed to leave the library reading-room. But the consequence was, that, by working hard at the MS., he was able to copy in ten weeks what would have taken two years in university hours. The same thing was done in other places. The pages were counted before the MSS.

were lent, and when they were returned, all that was required was to recount the pages and see that none of the illuminations had been cut out. He found some valuable MSS. in Austria, especially in Vienna; and, since the war, permission had been granted to examine the archives, which previously was systematically refused. He also found very valuable MSS. in Hungary and Bohemia; in Prague he found one particularly valuable. Owing to the defects in the catalogue, he was about to leave this city, disappointed that at so ancient a place he could find nothing at all, when it was suggested to him to look through the MSS. themselves; and, the librarian having given him permission to do so, he found, to his surprise, one of the most valuable MSS. of the Old Testament, and especially the Pentateuch, he had yet seen. He collated it most carefully. At Dresden he found a curious MS., in which the writer, who lived in the tenth century, had introduced illuminated designs in the margin, thus exhibiting the spirit of the age, as those Easterns who were Monotheists had a law against images and pictures, and hence scarcely ever illuminated their MSS. The Chairman went on to say that during his absence he had visited twelve countries, and had everywhere found valuable MSS. He hoped, before the session closed, to read a paper embodying the scientific results of his journey, and giving information as to University life on the Continent. He then expressed his thanks to the Vice-presidents, and the gentlemen who had contributed papers, for their attention to the Society during his absence.

Mr. T. J. Moore exhibited a corked soda-water bottle, half full of fluid, and largely encrusted with marine objects (oyster, serpulæ, barnacles, and various groups of *Polyzoa*), dredged by some fishermen between Liverpool and the Isle of Man, in about twenty fathoms of water; also a portion of the beak or sword of a swordfish (*Histiophorus*), presented

to the Free Public Museum by Captain S. T. Downes, and taken by him, in 1850, from the hull of the iron steamship *Ecuador*, when beached at San Blas, on the west coast of Mexico, and then under his command. The fish had struck into the hole for the escape of steam, under the forepart of the starboard sponson, and then come in contact with the edge of the boiler; this broke off the point, and split the remaining portion, one-half of which remained embedded, as above stated, and, the other half falling out, the water poured in until the hole was stopped.

Mr. Moore also brought before the meeting the following account, received from Mr. S. R. Graves, M.P., of the *habitat* (off the Philippine Islands) of the beautiful sponge known to the Spanish residents as the "Regadera," or Watering Pot, but to naturalists as "Venus's Flower Basket" (*Euplectella*); and of the mode of fishing for it. This account, with an illustrative drawing,* had been prepared by Captain Morgan, of the ship *Robin Hood*, from information supplied by Mr. George Mackenzie, resident in the Philippine Islands.

"The only place where Regaderas are to be found is about three miles from the shore, in front of the small village of Talisay, which is about five or six miles south of the town of Cebú, Isle of Cebú, Philippine Islands.

"The mode of catching them is very ingenious, and is as follows:—When the tide is about its full, the natives go out in very small canoes to the bed in which they are found, and which is about one mile in circumference, and from 130 to 135 fathoms deep. The native, when he considers he has come to about the extremity of the bed, then lets drop his fishing tackle, composed of a piece of iron of the shape of a T, to the two extremities of which are attached two flexible pieces of bamboo armed with hooks. This sinks to the bottom, and the native sits perfectly still in his tiny canoe, which is then gradually drifted by the tide or current over the ground on which are found the Regaderas.

* See *Annals and Magazine of Natural History* for March, 1869.

So soon as he feels that his trawling-apparatus has caught something, he begins to haul his line gently in, and generally finds two or three Regaderas impaled on the hooks. When taken out of the water, the Regaderas are dirty and yellow; but, after being put in fresh water, or exposed to the rain and then dried in the sun, they become perfectly white.

"The bottom of the sea where the Regaderas are found is composed of soft mud and sand. The root of the Regadera is imbedded in this, and the top or broad part always looks, as the natives say, to the setting sun (*"a donde se pone el sol"*). In the Regadera, when fished up, are generally found from one to three small animals (*bichos*) of the crab species, of about the size of very small shrimps. These are supposed to make these Regaderas, which are at first very small—say about an inch long, and generally expand about a foot in length. These crabs or animals can burrow into the sand out of their pretty home, and re-enter it at will. [I should very much doubt that the Crustaceans can either burrow out of the Regadera or re-enter it.—T. J. M.] The hooks of course frequently catch Regaderas without bringing them up; and many that have been recovered show signs of having had a new piece of netting put over the part torn by the hook.

"It is said that the first Regadera discovered in Cebú was sold for 50 dollars, and that a Dr. Caloo, who took it to Manilla, was there offered 200 dollars for it. For some time after that they continued to be worth 16 dollars each.

"It was only in 1865 that they became abundant, through the present bed being discovered."

The following paper was then read :

HISTORIC ERRORS AND DOUBTS;

HOW THEY ORIGINATE, AND HOW THEY ARE PERPETUATED.

By F. J. JEFFERY.

HISTORY is that branch of literature which records past events; in itself, pure and clear; if looked at in its simplicity, accurate to the minutest degree; it is in careless transcription that inaccuracies occur; when the biassed or ignorant human mind deals with it, it is rendered unreliable.

History records the *known*; but should a writer pretend to give to the world an account of past or passing events, and, without investigating for himself, relate hearsay reports, which may or may not be true, he produces not a history, but, in so far as inaccuracies are concerned, a mere record, unauthentic, and consequently unreliable.

It is true his errors may remain long undisputed; such a writer may have innocently assumed the report he has written to be correct; but, under the title of "History," his production only intensifies the darkness, and renders it still more difficult to separate the true from the false. It is when the earnest, zealous truth-seeker records the passing or past, resting neither night nor day until the truth is certified, his keen discernment instantly detecting where the impure or brackish water has mingled with the crystal stream of the truth,—it is then that a production is justly entitled to the name of "History."

History is like the sun, which, when shining forth in a

cloudless sky, is to the human eye glorious in the extreme, but when a cloud or fog intervenes becomes indistinct. It is only the fog which surrounds the pseudo-historian's brain that makes history indistinct; only when a cloud of indolence, bias, or want of knowledge envelopes his intellect, that history is darkened or mystified by his pen.

Historic errors and doubts are constantly occurring, and as often confusing the reader's mind.

It is intended in this paper to trace, somewhat, the cause of these blunders; why there should be two opinions as to an event having happened; and how authors fall into errors.

The history of the earliest times was traditional; that is, by a father recounting events to his son, and the son relating them again to the grandson, — perhaps more or less “enlarged,” and probably confusing events, one with another; therefore we must not be surprised at doubt being thrown on what is recorded to have transpired in bygone ages. But, while doubting that certain facts have occurred, we search to see what we should take as truth, and what reject as error.

For instance: “We are not informed,” in the Bible, “what became of the tower of Babel. Jewish tradition has tried to make up for the silence of Scripture by relating its miraculous destruction; while antiquarians have sought for its remains in the ruined towers of Chaldæa, both near to and far from its proper site. The *Birs Nimroud*, which stands at some distance from the right bank of the Euphrates, is now certainly identified with the Temple of Nebo, at Borsippa (probably the Chaldæan *Barsip*, or *Tower of Tongues*), which the Talmudists identified with the Tower of Babel. This temple of the ‘Seven Lights of the Earth’ was rebuilt by Nebuchadnezzar, who included it within the circuit of Babylon. The dedicatory inscription of that king,

lately discovered among the ruins, contains the following passage, as deciphered by Oppert:—‘A former king built it, (they reckon forty-two ages,) but he did not complete its head. Since a remote time people had abandoned it, *without order expressing their words*. Since that time the earthquake and the thunder had dispersed its sun-dried clay, the bricks of the casing had been split, and the earth of the interior had been scattered in heaps.’ This is a proof that the story is no mere Hebrew tradition.”* Nimrod, the great grandson of Noah, who is stated, in the pages previous to those from which I have just quoted, to be the first who openly revolted against the government of Noah, began the tower. We thus verify accepted accounts; and so also, by inscriptions on the remains in Egypt, we find proofs of the Israelites having been there. In this way we not only test tradition, but also early writings.

Early writings were necessarily manuscripts, because printing was not known in Europe till the fifteenth century. Every repetition of the author’s own work had therefore to be copied; this system of copying was entrusted in the earlier ages to Scribes, and in the later to Monks; and all transcriptions thus made were liable to differ from the original work in various parts, as the copyist thought to improve the rendering, or was inattentive to his work; hence we find the differences in divers MS. copies of early works.

But it is more the object of this paper to treat of errors and doubts attributable to works or men of modern times, than to observe minutely those of the “traditional” or “manuscript” ages. Nor do I enter into the doubts as to William Tell, Joan of Arc, “Sir” William Wallace, and others, as these, under the head of “historical difficulties,”

* Smith’s *Ancient History*, vol. i. pp. 81, 82.

would give matter for a future paper, as arising from conflicting or insufficient evidence.

By "tradition" we are informed that Rome was founded by Romulus. Some modern writers, however, endeavour to throw doubt upon such a circumstance, although one is shown the remains of the wall erected by Romulus, on the banks of the Tiber; thus we have the anomaly of ocular corroboration of the truth of tradition doubted by logic.

Again, in these modern days, when scientific knowledge has made such strides, when geological researches are so deep, there are people who doubt the accuracy of the Holy Scriptures; some geologists state that the world cannot have been created in six days, because the strata show thousands of years' formation. "When astronomers discovered and proved that the earth turns on its axis, and that the sun does not move round the earth, some cried out against this as profane, because Scripture speaks of the sun's rising and setting; and this probably led some astronomers to reject the Bible, because they were taught that, if they received *that* as a divine revelation, they must disbelieve truths which they had demonstrated." *

Others regard the Pentateuch as "old women's fables," because they learn that the rainbow is the natural effect of the rays of the sun through the rain; forgetting that He who said, "I do set my bow in the cloud, and it shall be for a token of a covenant between me and the earth," that "neither shall all flesh be cut off any more by the waters of a flood; neither shall there any more be a flood to destroy the earth,"* is also the source of all things, in cause and effect, whether it be the bow produced by the sun shining through the rain, or whether it be the cloud that produces the rain, or the sun that shines.

Again, others bring their mathematical knowledge to

* Whately.

† Gen. ix. 11, 13.

bear, and calculate numbers where the multitude is alluded to. Bishop Colenso, to whom I now chiefly refer, writes thus on Leviticus viii. 1-4. — “And Jehovah spake unto Moses, saying, Gather thou all the congregation together unto the door of the tabernacle of the congregation. And Moses did as Jehovah commanded him. . And the assembly was gathered together unto the door of the tabernacle of the congregation.” “First,” he writes,* “it appears to be certain that, by the expressions used so often, here and elsewhere, ‘the Assembly,’ ‘the whole Assembly,’ ‘all the Congregation,’ is meant the whole body of the people,—at all events the *adult males in the prime of life* among them,—and not merely the *elders*, or *heads of the people*, as some have supposed.” Then the Bishop, after taking the number of warriors, as mentioned in Numbers ii. 32, writes thus in reference to their being summoned to the “door of the tabernacle of the congregation :”

“Now the whole width of the Tabernacle was 10 cubits, or 18 feet, reckoning the cubit at 1·824 feet (see *Bagster's Bible*), and its length was 30 cubits, or 54 feet, as may be gathered from Exodus xxvi. (Horne's *Introduction*, iii. p. 232.)

“Allowing two feet in width for each full-grown man, nine men could just have stood in front of it. Supposing, then, that ‘all the Congregation’ of adult males, in the prime of life, had given due heed to the Divine Summons, and had hastened to take their stand, side by side, as closely as possible, in front, not merely of the *door*, but of the whole *end* of the Tabernacle in which the door was, they would have reached, allowing 18 inches between each rank of nine men, for a distance of more than 100,000 feet—in fact, nearly *twenty miles!*”

Of course, taking every word in its literal meaning, allowing nothing for idioms or figures of speech, and bringing mathematical calculations to bear, one can easily prove the fallacy of the record, and therefore conclude that no such event happened.

* Bishop Colenso on the *Pentateuch*, vol. i., pp. 31, 33.

Had the Bishop read the *Pall Mall Gazette* of November 12, 1867, he would probably have argued that Garibaldi was not defeated, and that none of his men were taken prisoners; for in that paper was the following:—"Yesterday the entire city went out of Porta Pia, in carriages and on foot, to greet the captives, and were met by a long train of the wounded. The melancholy procession was watched by forty thousand spectators. But the vast crowd preserved an unbroken silence, only uncovering to the Garibaldians."

Let us, for a moment, adopt the Colonial Divine's argument. Here we have a statement that "the entire city went out of Porta Pia, in carriages and on foot." According to the *Almanac de Gotha*, the population, "the whole," of Rome was, in 1866, 210,701, exclusive of visitors, who average 20,000, making a total of 231,000. Now we found, in the Bishop's argument, that 600,000 *men*, standing in lines of nine, would extend twenty miles, each nine of these men occupying a line of eighteen feet; but at Rome allowance must be made for women and children, ladies with crinoline, and young ladies who cannot stand "a crush," all going out at Porta Pia; in which case we should have a line of about eleven miles. On the supposition that the whole of Rome *walked*, or *marched* out, this would be the length; but we are told that they went in "carriages and on foot;" and, allowing a sufficient distance for each carriage, that one-fourth of these carriages held six persons, and three-fourths of them three persons, which is according to license, I do not think we should find our line of Romans far short of that of Colenso's congregation of Israelites, *i. e.*, twenty miles in length. Next we come to the length of time required for "marching past" the gate. One man, a good walker, might do his four miles an hour, for the women and children we will say three; at this rate twenty miles of people, —

for the horses in the carriages would on such an event not be allowed to go faster than a walk, — would require nearly seven hours to pass through the Porta. Again, supposing that every footman and horseman, every coachman and costermonger's cart driver, went with as much precision as if they had been drilled, and allowing for irregularities, it would occupy quite ten hours for "the whole city" to turn out. With his knowledge of mankind, Colenso would say, "Nobody would wait in the streets for ten hours to see the soldiers!" Besides, the military were to pass through this gate to enter Rome, and, as the two currents could not pass through at the same time, in opposite directions, it cannot be true. *Ergo, no such event happened!* simply because "figure of speech" is not admitted!

The Bishop, after calculating the area, etc., of the court of the tabernacle, concludes the chapter with: "It is inconceivable how, under such circumstances, 'all the Assembly,' the 'whole Congregation,' could have been summoned to attend 'at the door of the tabernacle' by the express command of Almighty God." Reasoning on the extract from the *Pall Mall Gazette* in the same way, we may equally well say, "It is inconceivable how, under such circumstances, 'the whole of Rome' could have gone 'out of Porta Pia.'"

Another section under this heading is that of Logic. As by Algebra one may prove that $1 = 4$, so by Logic it may be "clearly" demonstrated that Napoleon Bonaparte never existed; and certainly it is amusing to see how far the writer of an instructive book, *Historic Doubts relative to Napoleon Buonaparte*, can argue on the point, and even deal with the statement of those who saw this genius at Plymouth. The writer treats this latter point as follows:—

"But what shall we say to the testimony of those many respectable persons who went to Plymouth on purpose, and saw Buonaparte with their own eyes? Must they not trust their senses? I would not dis-

parage either the eyesight or the veracity of these gentlemen. I am ready to allow that they went to Plymouth for the purpose of seeing Buonaparte; nay, more, that they actually rowed out into the harbour in a boat, and came alongside of a man-of-war, on whose deck they saw a man in a cocked hat, who, *they were told*, was Buonaparte. This is the utmost point to which their testimony goes; how they ascertained that this man in the cocked hat had gone through all the marvellous and romantic adventures with which we have so long been amused, we are not told. Did they perceive in his physiognomy, his true name and authentic history? Truly, this evidence is such as country people give one for a story of apparitions; if you discover any signs of incredulity, they triumphantly show the very house which the ghost haunted, the identical dark corner where it vanished, and perhaps even the tombstone of the person whose death it foretold."

Such is the whole of the book.

"Is it not just possible that, during the rage for words of Greek derivation, the title of 'Napoleon' (Ναπολεων), which signifies 'Lion of the Forest,' may have been conferred by the popular voice on more than one favourite general, distinguished for irresistible valour? Is it not also possible that 'Buona-parte' may have been originally a sort of cant term, applied to the 'good (*i.e.* the bravest or most patriotic) part' of the French army, collectively; and have been afterwards mistaken for the proper name of an individual? I do not profess to support this conjecture; but it is certain that such mistakes may and do occur."

But were I to extract all the examples I might give the book. I think, however, the above will go far to show what *reasoning* will do; it is very much after the logical deductions in answer to the conundrum, "Why is a bee-hive like a rotten potato?"

We have thus seen that historic errors and doubts may arise from fallacious reasoning or misapplied learning.

The second division of my subject will refer to such errors and doubts as arise from PERSONAL and POLITICAL MOTIVES. This is a very extensive field, and is rich in examples, many, of which, however, have been decided or cleared up by time.

Impersonations have existed in all ages, whenever the deceiver could hope to gain his end. Perkin Warbeck did not attempt to impose on the followers of the House of York until the world believed that King Edward V. and his brother Richard had been murdered in the Tower of London; then, mainly at the instigation of the bereaved Queen mother, he endeavoured to make the people believe he was the young Duke of York, announcing how he had escaped from the Tower, and the murderous designs of his enemies. His followers thickened, but, though his personal appearance resembled that of the Duke of York, the want of consistency in the narrative of his adventure caused them to fall from him, till he was obliged to go whence he came. The effect, however, of his deceptions caused some to doubt whether the princes were both murdered, as related, until, in the reign of Charles II., the discovery of their bones set all dispute at rest.

In French history we have the doubt as to whether the Dauphin, styled Louis XVII., really died in the Temple or not. A book, by John H. Hanson, on "The Lost Prince," published in New York, 1854, goes deeply into the controversy, and is well worth reading, being so interesting in minute details upon matters tending to confirm the author's theory that the prince did not die in the Temple, but was shipped to America. At page 103, we find an account of a tradesman applying for the post of guard; that as such he visited the prince; but, being instructed not to speak or reply to the prisoner, under the penalty of losing his head, he thus recounts his opinion: —

"He sat upright in the bed, when nothing could exceed my astonishment, on viewing a figure much taller, from the head to the bottom of the back, than the Dauphin could possibly have displayed from what I had seen of him only six months before; my wonder, however, increased on beholding him thrust his legs from beneath the covering, from which I was enabled to form an estimate of the height of the

figure before me, if standing erect, when I felt an inward conviction, that, however extraordinary the efforts of Nature may be in some instances, no such change could have taken place in the growth of a youth in the half year, as must have been the case, supposing the object before me to have been the Dauphin. A more pitiable object never met the human sight, whosoever it may have been, for as to the Dauphin, *I am fully convinced it was not him.*" (*sic.*)

Commenting on the impossibility of such a rapid growth, he "received the following singular reply; 'Sick children, Citizen, will sometimes shoot up very fast; but I advise you to go home, and keep a still tongue in your mouth, lest you should grow shorter by a head.'"

Some little time before this visit, the locks had been oiled to work noiselessly; it was not necessary to shut the doors on the stairs. The child was in danger; the doctor left instructions; next day nobody visited the prince; the doctor did not call. All was mystery; that night the doctor died suddenly; and, from the "31st May to 5th June, there is no record of anything that transpired in the sick chamber, except a remark ... that the child felt sad on June 1st."

The author proceeds to quote certain documents which differ; and to state that the various movements of Louis XVIII., before and after he ascended the throne of France, showed that doubt existed even in his mind as to the death of the real Dauphin; that the statements of the surgeons who attended the prince during his incarceration, and those who made the post-mortem examination, differ; that one of the surgeons who examined the body "perceived no resemblance" to the Dauphin he had known when alive, "and was convinced that some artifice had been used to preserve the life of the young prince;" that "the police records prove the fact of escape."

In the same year that the prince "died," 1795, a French

family arrived in the United States, whose son went by the name of Mons. Louis; this lad took little notice of any one; the "parents" had some things formerly the property of Louis XVIII. A lad was met with, also among the Indians, some little time afterwards, who, unlike the rest of his brothers, his father or mother, spoke French fluently; who had a scar on his face, exactly corresponding with that on the face of Louis XVII.; and who grew up and became a missionary, by the name of the Rev. E. Williams. Some time after, the Prince of Joinville visited America, enquired for the Rev. E. Williams, and, at an interview with him, told him the secret of his birth, asking him to sign a document renouncing his claims. In a conversation with Mr. Hanson, Mr. Williams, after communicating the proofs he had of his regal birth, said, "I don't want a crown. I am convinced of my royal descent; so are my family. The idea of royalty is in our minds, and we will never relinquish it." He then showed to his visitant some French royalty relics.

This Royal Divine, if we may term him such, is now dead, without having claimed any right to the throne of "his ancestors," though fully convinced in his own mind as to his royal parentage. Others, equally satisfied or deluded as to their parentage, have claimed the honour. All had mementoes of their parentage in relics; they each bore the scar by which Louis XVII. could be known; but none bore the family likeness so strong (if at all) as this. And so the death of the Dauphin will always remain an historic doubt!

Since I commenced this paper, a copy of Rapin's *History of England* has been shown me, with two marginal notes, evidently not of to-day's or yesterday's writing, relating to the death of Charles II. of England. This I have classed under this section, not from any *proof* of personal or political motive, but simply because, if the facts contained in the notes

be true, there is no doubt that a political or personal motive attaches to them.

Lord Macaulay's *History* (ch. iv., vol. 1.) commences as follows :—

“ The death of Charles II. took the nation by surprise. His frame was naturally strong, and did not appear to have suffered from excess. Indolent as he was on all occasions which required tension of mind, he was active and persevering in bodily exercise.”

In 1684 he was seized with what was supposed to be the gout, and, as this prevented him from taking his usual exercise, he resorted to his laboratory, and occupied his leisure in experimenting on mercury. His disposition, which had hitherto been easy and cheerful, now became irritable, and his temper short; but “ it was not supposed that his constitution was seriously impaired.”

The state of things in the palace, on the evening of the 1st February, 1685, being Sunday, was anything but what we should expect the head of the Church of England would have permitted. Charles was to be seen enjoying the company of his “ sultanas,”* Barbara Palmer, the Duchess of Cleveland, the Duchess of Portsmouth, and Hortensia Mancini, Duchess of Mazarin, to the latter of whom Charles, when in exile, had paid his addresses in vain.

In that room of revelry might be seen the gambler and the courtier, each respectively at his work.

The King complained of indisposition; “ he had no appetite for his supper, his rest that night was broken; but the following morning he rose, as usual, early.” What a morning! When His Majesty's attendants went to him, his speech was broken and unintelligible, and his thoughts wandered. Of that Sunday evening, Rapin, quoting from Burnet's *History*, writes—

* Macaulay.

"On the first of *February*, being a *Sunday*, he eat little all day, and came to Lady *Portsmouth* at night, and called for a porringer of spoon-meat. It was made too strong for his stomach, so he eat little of it, and had an unquiet night."

After the word "spoon-meat" is a cross (Plate I.), made with a pen, and in the margin we meet with the first note,

"The Dutchess of Portsmouth told the Countess of Shaftsbury, in the year 1714, that this was poissend by a woman of hers that confessed it to her on her death-bed."

It has hitherto been a surmise, a doubt, as to how it happened that this king, whose easy temper and affable manners had won the affection of a large part of the nation,* should have died so suddenly. Macaulay, vol. i., pp. 428, 9, discusses the questions as to the death of the prince that arose in the minds of the people, who suspected that there must have been foul play. Prince Henry, James I., Princess Elizabeth, Cromwell, and then Charles II., were all suspicious cases in the minds of the populace. The priest who gave Charles the last unction was strongly suspected. The historian proceeds to say,

"We cannot, therefore, wonder that wild stories without number were repeated and believed by the common people. His majesty's tongue had swelled to the size of a neat's tongue. A cake of deleterious powder had been found in his brain. There were blue spots on his shoulder. Something had been put into his snuff-box. Something had been put into his broth. The Duchess of Portsmouth had poisoned him in a cup of chocolate. The queen had poisoned him in a jar of dried pears.

"Such tales ought to be preserved; for they furnish us with a measure of the intelligence and virtue of the generation which eagerly devoured them."

Hume states, chap. lxi.,

"Amidst these truly wise and virtuous designs, he was seized with

* Macaulay.

a sudden fit, which resembled an apoplexy; and though he was recovered from it by bleeding, he languished only for a few days, and then expired, in the fifty-fifth year of his age, and twenty-fifth of his reign. He was so happy in a good constitution of body, and had ever been so remarkably careful of his health, that his death struck as great a surprise into his subjects, as if he had been in the flower of his youth. And their great concern for him, owing to their affection for his person as well as to their dread of his successor, very naturally, when joined to the critical time of his death, begat the suspicion of poison.

"All circumstances, however, considered, this suspicion must be allowed to vanish, like many others, of which all histories are full," Vol. vi., p. 227.

Before leaving this question of poisoning, we must revert to the account of Charles's state on the Monday morning. He made an effort, after rising, to converse with his courtiers, who had as usual assembled to see their sovereign dressed, "in his usual gay style; but his ghastly look surprised and alarmed them. Soon his face grew black, his eyes turned in his head; he uttered a cry, staggered, and fell into the arms of Thomas, Lord Bruce." After being laid on his bed, he was brought round by his medical attendants, by bleeding, etc. On the Thursday following that Sunday, "he was in great pain, and complained that he felt as if a fire was burning within him."

It had for a long period been suspected, though proof there was none publicly known, that Charles died a Papist. It was known that he would not say anything to the Protestant bishops present; that all were turned out of the chamber of death for half an hour; and, says Dr. Burnet, quoted by Rapin,

"Only Lord *Feversham* opened the door once, and called for a glass of water. Cardinal *Howard* told me, at *Rome*, that *Hudleston*, according to the relation that he sent thither, made the king go through

Extract of
Dr. Burnet's
History.
T. I. p. 606,
&c.

"All this winter the King looked better than he had done for many years. He had a humour in his leg, which looked like the beginning of the gout: So that for some weeks he could not walk, as he used to do generally, three or four hours a day in the Park; which he did commonly so fast, that as it was really an exercise to himself, so it was a trouble to all about him to hold up with him. In the state the King was in, he not being able to walk, spent much of his time in his laboratory; and was running a process for the fixing of Mercury. On the first of *February*, being a *Sunday*, he eat little all day, and came to Lady *Portsmouth* at night, and called for a porringer of spoon-meat. It was made too strong for his stomach; so he eat little of it: And he had an unquiet night. In the morning one Dr. *King* a Physician and a Chymist, came, as he had been ordered, to wait on him. All the King's discourse to him was so broken, that he could not understand what he meant. And the Doctor concluded, he was under some great disorder, either in his mind, or in his body. The Doctor, amazed at this, went out, and meeting with Lord *Peterborough*, he said, the King was in a strange humour, for he did not speak one word of sense. Lord *Peterborough* desired he would go in again to the Bed-chamber, which he did." * * * * *

* * * * * "As soon as *Hudleston* had prepared every thing that was necessary, the Duke whispered the King in the ear, upon that the King ordered, that all who was in the bed-chamber should withdraw, except the Earls of *Bath* and *Feversham*; and the door was double-locked. The company was kept out half an hour: Only Lord *Feversham* opened the door once, and called for a glass of water. Cardinal *Howard* told me at *Rome*, that *Hudleston*, according to the relation that he sent thither, made the King go through some acts of contrition, and, after such a confession as he could then make, he gave him absolution, and the other sacraments. ✕ The *Hostie* stuck in his throat: And that was the occasion of calling for a glass of water. He also gave him extreme Unction. All must have been performed very superficially, since it was so soon ended. But the King seemed to be at great ease upon it." * * * * *

Extract from *Rapin's History of England.*

some act of contrition, and, after such a confession as he could then make, he gave him absolution, and the other sacraments."

Here we come to the second note (see Plate I.) in the margin—

"Lord Braidalbin told L^d Willoughby that he was in the room and saw it, being then Gentleman of the Bedchamber."

Though this fact has long been universally credited, yet the note here given is interesting, as confirmatory of the statement sent by the confessor to the Cardinal.

Now a word or two on these very interesting writings. Both are in the same hand, both have every appearance of age, but unfortunately neither this nor the other volume bears any clue as to the ownership of them at the time. Bought at a bookstall, it seems to have shared the fate of most, if not of all, such articles as get into the hands of the dealers in such things.

Books must be made to look as new as possible, and, like the sweep who wipes his face with the soot bag to make it look clean, the plastering, pasting, and patching to which such books are submitted decidedly do not improve, but, on the contrary, injure them as bibliographic specimens. Interesting as the book under review is, considered as a standard work of the period when it was published, it is more interesting from having these remarkable marginal notes. If there were no cause to suspect poison before, certainly the first is likely to create doubt as to the accepted historical account of the cause of Charles's death. By itself, it could not have so much weight as it must have when taken in conjunction with the second note, the facts of which have long since been known, and therefore substantiate its accuracy.

Then, to test the accuracy of the first, I have quoted rather freely from Lord Macaulay's invaluable history.

All the symptoms bear out, in my humble judgment, strong suspicions as to the truthfulness of the first note, but *the motive* is to be looked for, the reason "for so foul a deed" is wanting.*

* Subsequently to reading this paper, I have read Burnet's *History of his Own Times*, and met with a section which I here give, that tends to show the very strong suspicions as to poison; also that the Duchess of Portsmouth did not keep her information to herself; therefore that it is by no means a new theory, but rather one which more recent historians have preferred to overlook, or put aside, being, in their judgment, improbable; though it is worthy of note that, according to the extract here given, *the contents of the stomach appear never to have been analysed*.

"There were many very apparent suspicions of his being poisoned: for though the first access looked like an apoplexy, yet it was plain in the progress of it that it was no apoplexy. When his body was opened, the physicians who viewed it were, as it were, led by those who might suspect the truth to look upon the parts that were certainly sound. But both Lower and Needham, two famous physicians, told me, they plainly discerned two or three blue spots on the outside of the stomach. Needham called twice to have it opened: but the surgeons seemed not to hear him. And when he moved it the second time, he, as he told me, heard Lower say to one that stood next him, Needham will undo us, calling thus to have the stomach opened, for he may see they will not do it. They were diverted to look to somewhat else: and when they returned to look upon the stomach, it was carried away: so that it was never viewed. Le Fevre, a French physician, told me, he saw a blackness in the shoulder: upon which he made an incision, and saw it was all mortified. . . . But since I have mentioned the suspicions of poison as the cause of his death, I must add that I never heard any lay those suspicions on his brother. But his dying so critically, as it were, in the minute in which he seemed to begin a turn of affairs, made it to be generally the more believed, and that the papists had done it, either by the means of some of lady Portsmouth's servants, or, as some fancied, by poisoned snuff; for so many of the small veins of the brain were burst, that the brain was in great disorder, and no judgment could be made concerning it. To this I shall add a very surprising story, that I had in November, 1709, from Mr. Henly of Hampshire. He told me that when the duchess of Portsmouth came over to England, in the year 1699, he heard that she had talked as if king Charles had been poisoned; which, he desiring to have from her own mouth, she gave him this account of it. She was always pressing the king to make both himself and his people easy, and to come to a full agreement with his parliament; and he was come to a final resolution of sending away his brother, and of calling a parliament: which was to be executed the next day after he fell into that fit of which he died. She was put upon the secret, and spoke of it to no person alive, but to her confessor: but the confessor, she believed, told it to some, who, seeing what was to follow, took that wicked course to prevent it. Having this from so worthy a person, as I have set it down without adding the least circumstance to it, I thought it too impor-

It would occupy too much space to give an account of all the causes which produced the Rye House Plot, and other conspiracies, and threatened a revolution. By the commencement of the year 1685 the agitations had reached an alarming height. Monmouth, who was a Protestant, and who had received every attention as if he were heir to the throne, had gone into voluntary exile; the Lower House of Parliament had passed the Exclusion Bill. The King conceded everything but this, the object of which was to exclude the Papist Duke of York from the throne. James had been sent to Scotland, and Russell beheaded. The King of France meddled with each faction. Charles's vacillation had brought all this about, rendering adverse to him the cities and boroughs, of whose charters his heart was set upon depriving them. Conspiracies were organised in London, Chester, and elsewhere; and, on the evidence of false witnesses and perjurers, London was deprived of her charter, and other towns speedily followed.

Halifax* was not content with standing on the defensive.

tant not to be mentioned in this history."—Burnet, vol. ii., pp. 473, 4, 5, 6, 7. (Oxford, 1833.)

In a note to the last sentence of this extract, we have—

"Mr. Ellis, in the fourth volume of his *Second Series of Original Letters*, has inserted a report, drawn up in Latin, of the king's last illness, which he introduces with this preface: 'Of the illness which immediately preceded the death of Charles the Second, a very full and curious detail in Latin is preserved in the Library of the Society of Antiquaries, together with copies of the prescriptions administered (two of them signed by no fewer than fourteen physicians,) and an account of the appearance of his majesty's body when opened; the whole completely removing the suspicion, that the king was taken off by poison.' P. 74." [This last sentence scarcely agrees with Burnet's own observations, here given.]

* "He still went on against Lord Rochester. He complained in council, that there were many razures in the books of the treasury, and that several leaves were cut out of those books: and he moved the king to go to the treasury chamber, that the books might be laid before him, and that he might judge of the matter upon sight. So the king named the next Monday. And it was then expected, that the earl of Rochester would have been turned out of all, if not sent to the Tower. And a message was sent to Mr. May, then at Windsor, to

He openly accused Rochester of malversation. An inquiry took place, from which it appeared that £40,000 had been lost to the public by the mismanagement of the First Lord of the Treasury. In consequence of this discovery he was not only forced to relinquish his hopes of the white staff, but was removed from the direction of the finances to the more dignified, but less lucrative and important post of Lord President. "I have seen people kicked downstairs," said Halifax; "but my Lord Rochester is the first person that I ever saw kicked upstairs." Godolphin, now a peer, became First Commissioner of the Treasury.

To that morning the contending factions in Charles's council had, during some days, looked forward with anxiety. The struggle between Halifax and Rochester seemed to be approaching a decisive crisis. The former, not content with having already driven his rival from the Board of Treasury, undertook to prove him guilty of such dishonesty or neglect in the conduct of the finances as ought to be punished by dismissal from the public service. It was even whispered that the Lord President would be probably sent to the Tower. The King promised to inquire into the matter, and the second of February was fixed for the investigation; on which day several officers of the revenue were ordered to attend, with their books of account.

Assuming that the popular feeling as to the poisoning was true, I refer to these circumstances, not with any intention of proving that either Halifax or Rochester was guilty of instigating this murder, but to shew that Charles's vacillation, as I have previously intimated, had become unbearable. And here certain questions seem naturally to arise. Might not Halifax have doubted Charles's consistency?

desire him to come to court that day, which it was expected would prove a critical day. And it proved to be so indeed, though in a different way."—Burnet, vol. ii., p. 456.

Might not Rochester have been afraid of the Tower? Might not the smouldering embers of various conspiracies still have been in existence? And might not the actors in the scene, desiring to save the kingdom from another revolution through the want of firmness on the part of Charles, have instigated the women in the kitchen to terminate this period of doubt? To understand this matter thoroughly, one must have before him the whole history of Charles II.; but I think I have said sufficient to show that a doubt may be thrown upon the statements generally accepted as facts, and to justify my classing the death of Charles under the second section of my paper.

There are other personal doubts which arise from the ambition of different people. A man of title dies, and is succeeded by his putative son. Some one, assuming to be the next of kin, endeavours, for personal or monetary reasons, to blacken the memory of the deceased, as well as the widow. He questions the legitimacy of the successor, but yet strangely withdraws all action, and allows the inheritor to enjoy all the titles and dignities. What is the secret of this? Doubtless, a sum of money. Was he poor, that he wanted money? Why did he not say so? Was the birth illegitimate? Why did he withdraw the action? Was there a doubt as to the birth? Why did he not seek to prove his case?

Again, take the Tichbourne baronetcy. Here we have the eldest son reported as drowned; but on the death of the baronet, a claimant comes from Australia, whom some people recognise as the rightful heir to the property, while others say "that is not the man." Here, then, is a doubt, which it would not be right to discuss here, seeing the dispute is to be tried by law.

Such cases are constantly rising up, and very often throwing valuable estates into Chancery, until one Counsel

whispers to his opponent, "Do you know the funds are exhausted?" Then the affair is soon amicably settled.

Perhaps one of the best illustrations of this class of historic doubts is that relating to the birth of Napoleon I.

Napoleon Buonaparte was born at Ajaccio, February 5th, 1768, which date was verified by his own attestation, besides those of others of his family, on his marriage with Josephine, 1795.* At this period he had no defined object to gain by falsifying the date; but when it became necessary to be a French citizen by birth, and Corsica was not French till later on in 1768, then, to further his ambition, he gave out that he was born 15th August, 1769; which date is now accepted as the correct one by all Frenchmen, who celebrate the Fête in honour of it on that day of each year.

I shall now pass on to my third section, and consider those errors which *create* doubts, and which arise from

* *Cyclopædia of Biography*, article NAPOLEON, written by Sir A. Alison. I have endeavoured, but failed, to get a copy of this register from the original, and must refer the reader to Alison's *History of Europe*, vol. iv., lib. edit., pp. 1-2, for the extract, which is given as follows:—"He entered the world on 5th February 1768, and subsequently gave out that he was born in August 1769, as, in the interim, Corsica had been incorporated with the French monarchy.—ODELEBEN, i. 230, *Histoire de France*, par M. SALGUES, i. 67. The record of his marriage with Josephine, which still exists in Paris, gives his birth as on 5th February 1768. It is as follows:—"2d Arrondissement de Paris. Acte de mariage de Napoléone Buonaparte, général-en-chef de l'armée de l'intérieure, agé de vingt-huit ans, né à Ajaccio, département de la Corse, domicilié à Paris, rue d'Antin, fils de Charles Buonaparte, rentier, et de Letzia Ramolini, son épouse, — Et de Marie Joseph Rose de Tascher, agée de vingt-huit ans, née à l'île de Martinique, dans les Iles du Vent, domiciliée à Paris, rue de Chantérene, fille de Joseph Gaspard de Tascher, capitaine de dragons, et de Rosa Claire des Vergers de Sanois, son épouse. Moi, Charles Théodore François Leclerc, officier public de l'état civil au second arrondissement municipal de Paris, après avoir fait lecture en présence des parties et temoins — 1^o de l'Acte de naissance de Napoléone Buonaparte, général, qui constate qu'il est né le 5 Février 1768, de légitime mariage de Charles Bonaparte et de Letzia Ramolini.†—The register bears the signatures, 'Tallien, M. J. R. Tascher, P. Barras, Le Manois le jeune, Napoleone Bonaparte, Charles Leclerc, officier public.'—See the whole extract in SALGUES, *Memoirs pour servir à l'Histoire de France*, i. 66, 67."

† "This official act, signed by Napoleon himself on an occasion when no one but a very young man represents himself as older than he really is, and when his interest lay the other way, as Corsica was not incorporated with France till June 1769, decides the matter."

ignorance, carelessness in verifying or in correcting proof-sheets, or indifference as to the importance of accuracy of the subjects treated of.

Haydn's *Dictionary of Dates* is a book to be found in many a gentleman's library, and on most reference bookshelves. No doubt it is considered a most accurate work; but when we find, p. 601, "*Twelfth Edition, corrected to February, 1866,*" article "Prussia," such entries as the following, it is certainly no easy matter to decide which is the correct date, 1860 or 1861.

"1840, Frederick-William IV. son; succeeded June 7.

(Born Aug. 3, 1770; died Jan. 2, 1861.)

1860, William I. brother; born March 22, 1797."

and on the preceding page,

"Death of Frederick William IV. Accession of William I. Jan. 2 1861."

and in the table of contemporary European sovereigns, under "Prussia" we read,

"1840, Fred.-William IV.

1860, Will. I."

On the same table, under "Naples and Sicily," we have

"1738, Chas. IV.

Naples.

1759, Fred. IV.

Sicily."

Here "1738" should be "1734," and "Fred." should be "Ferd."

Again, the same table states, under "Great Britain,"

"1812 (George, Prince of Wales, *regent,*)"

while in the body of the work, under article "England," we read,

"REGENCY.—The Prince of Wales, PRINCE REGENT, Feb. 5, 1811."

We naturally enquire whether such differences occur in other parts of the work; for if so, it cannot be a book of dates, but of errors. If it be contested that I am "hard" on such a "slip," and that the discrepancies I have quoted may be oversights in correcting the proof sheets, I admit they may be; but if such be the fact in this case, may it not be the same in other parts of the book? and, if so, wherein lies the value of such a work as a book of reference? But it is clear these are not misprints, for they occur in the previous edition of the work.

The Rev. Charles Hole, B.A., has recently published *A Brief Biographical Dictionary*, a convenient book for the pocket.

In his preface he takes us, so to speak, behind the scenes, tells us the difficulties an author of such a work has to contend with, the discrepancies of "authorities consulted," and the doubts created in a compiler's mind from conflicting statements. When we have read a few of his remarks, we turn over a few pages, to see whether "knowledge is power" in his mind, while he had pen in hand, and we read as follows, page 6,

"At the close of his undertaking, the compiler has become abundantly aware, from experience, of the truth of a common remark, that there is nothing so liable to error and corruption as that most happy invention of figures; and he believes it will not prove unsuitable or useless to make a few observations on this subject."

He then proceeds to show the bewilderment of a "general reader," who, on referring to different works, finds them giving many diverse dates for one and the same event. He next observes —

"By paying attention to the various errors corrected in carrying a work like the present through the press, one has an opportunity of becoming aware of the kinds of mistakes which compositors on the one hand are more particularly liable to, as well as those for which an

editor on the other hand has himself solely to blame; and as this may sometimes aid in accounting for discrepancies, a few illustrations will perhaps be acceptable.

"For instance, the figures 8, 3, 5, frequently get put in each other's places, owing probably to a rough resemblance among them, especially in indistinct manuscript. Examples occurring in the preparation of the present work, of 6 in the copy appearing as 9 in the proof, and instances in other works of these figures being interchanged, make it tolerably evident that they sometimes get inverted by the printer, either in sorting the type or in the act of composition. Cases of 6 and 0 have been remarked in correcting these proof sheets, and in the *Biographie Universelle*, John Hubner appears as born in 1608 for 1668. The figures 1 and 7 have also been interchanged. The same figure repeatedly consecutively, 1779 becoming 1799; and, *vice versa*, 1669 for 1699, 1445 for 1455. The culprit years, however, which most frequently sin in this way are 1668 and 1688."

In a former part of the preface, the compiler tells us "a figure that is not of established certainty is marked with an asterisk" in the work under review, and "the plan of this volume does not admit of a variation of dates being discussed, or even stated; and only allows an established uncertainty to be intimated by an asterisk."

We shall now turn to the dates, and see how far the knowledge of this author is useful to himself in his work.

"The most culprit years," I have just quoted, "are 1668 and 1688;" according to page 454:—"William III." (of England) "(1669-1702) *of Orange*, born 1650, died March 8, 1702"; therefore William was nineteen years of age when he was invited to ascend the English throne by virtue of his wife!

So, with this knowledge, we have this error, "1669" for "1689."

P. 186—"Fred.-William IV." (of Prussia) "(1840-57)" born 1795, died January 1, 1861." We have seen how the author observes that 7 may mean 1, and *vice versa*; and I

think we may conclude that his MS. was so badly written that 6 was mistaken for 5; for if not, how comes the author to have the date differently on the same line, "1857" and "1861"? as this king vacated the throne at his death! If, however, the writer considers the monarch vacated it at the commencement of his unfortunate affliction,* why has he not represented George III., of England, as vacating his throne in 1820, since he was imbecile in 1811? And how is it that "January 1" is misprinted for "January 2"?† In short, the author, in his preface, admits that any figures may stand for any others, which his compilation proves? Where, then, is the value of the book?

These are not the only erroneous books of reference which have crossed my path. Wishing, in the course of my reading, to ascertain the date of the birth of John Quincy Adams, once President of the United States of America, and father of the late Ambassador to this country, I consulted several works. Blair's *Chronological Tables*‡ gives 1769; Cates' *Biographical Dictionary*, 1769; Hole's, 1767; *Cyclopædia of Biography*, 1767.

Although it is very generally remarked that these errors are the fault of the printer, not of the author, I do not think so. Here is one, not of dates but of names. *Lives of Eminent and Illustrious Englishmen*, edited by George Godfrey Cunningham (Fullarton & Co., 1837), states, "George Gordon Byron, Lord Byron, was born at Dover, on the 22nd January, 1788." *The Imperial Dictionary of Universal Biography* (Mackenzie, Glasgow), states, "Byron, George Noel Gordon, Lord Byron, of Rochdale, Lancashire, born in Holles Street, London, 22nd January, 1788." Now this

* The present King was appointed Regent consequent on the insanity of Frederick William, 9th Oct. 1858; the date, 1857, would therefore still be wrong.

† *Almanac de Gotha*, 1863.

‡ In his preface, Blair gives some curious as well as absurd blunders, tending to confuse facts and dates, met with by him during his literary compilation.

cannot be the printer's error, but that of the author, and I must endorse Mr. Hole's observation to some extent, and remark that, though such inaccuracies may arise, first from illegible writing by the author, and secondly from carelessness in correcting the proof sheets, this error as to Lord Byron's birth-place is purely one of ignorance on the part of one of the two authors. But doubts as to the birth-places of leading men are by no means uncommon. According to some, the Duke of Wellington was born at Dangan Castle; according to others, in Dublin; and no sooner was Lord Palmerston dead than a doubt arose as to the place of his nativity.

If I dare use the expression, books used for educational purposes should be more carefully written, and be more exact in their statements, than those published for older persons.

A school book of the class referred to I may mention—*The Student's Hume*, from which I shall only quote one error, p. 723. In a foot note, the student is informed that—

"In 1848, Louis Napoleon was elected President of the French Republic. By the *coup-d'état* of December 2, 1852, he dissolved the existing constitution, and made himself the supreme ruler of France under the name of Consul, which he changed into the title of Emperor in 1853."

Dyer, in his *Modern Europe*, vol. iv., p. 652, states "On December 2 he was proclaimed Emperor, with the title of Napoleon III.;" and in vain do we search, in the pamphlet which appeared last March,* reputed to be from the Emperor's pen, for any allusion to his "consulate." There we find that on the 2nd December, 1852, he was elected Emperor, after bearing the title of "Prince President."

The French Government issued a complete series of medals of the French monarchs; on that of the present Emperor we read, "Pres. 1849, Emp. 1852" (see Plate II., Fig. 3).

* *Les titres de la Dynastie Napoléonienne.*

In the preface to *The Student's Hume*, the editor (whose name by the way, does not appear), quoting from *The Times*, April 1, 1858, states "that Hume's account of our English annals is still, with all its defects, the best history of the period over which it extends." It is not for us to condemn all books wholesale, but if a book be defective, and such defect be known, better let it rest with its defects, than extend the error to our day, the extension perhaps making it more glaringly erroneous than the original work.

De Quincy, in his *Falsifications of English History*, after writing on a statement made by Hume in his history, says, "Upon any question of fact, indeed, Hume's authority is none at all, for he never pretended to research." And such, from my experience, I fear must be said of the compiler of *The Student's Hume*.

Another book of this class, which claims our attention, is one by the Rev. Dr. Bartle, which bears the title of *Synopsis of English History*. It is a book of a convenient size for the purpose for which it is intended, but, like others under our notice, contains peculiar statements. For example, Napoleon III., according to one page, ascended the French throne in 1852, according to another, in 1853.

According to one page, France acquired Savoy and Nice in 1859, while the following page gives 1860 as the date of that event.

The author states Schleswig and Holstein were annexed to Prussia in 1865, while we have the proclamation annexing them appearing in January, 1867.

On page 162 of this work, we read, "Hans Holbein, a famous Dutch portrait painter (1497-1553);" while, in a *Biographical Dictionary*, we read, "Hans Holbein, one of the most famous German painters, was born at Augsburg." But in this paper we must be satisfied with a few illustra-

tions from several books, rather than give several from a few books.

As an example of the perpetuation of errors, it may be fairly assumed that Dr. Bartle's errors as to Napoleon III.'s accession as Emperor must have been taken from that one I have referred to in *The Student's Hume*.* We thus see the danger of careless writing, and how errors are perpetuated.

As this class of literature is every day being given forth to the world, it is obviously better that fewer men should aspire to the high and responsible position of historical writers, than that men of such manifest ignorance or carelessness should be allowed to put pen to paper. I say "ignorance or carelessness," for either an author is ignorant as to where he should go for *correct* facts, or what authorities he should adopt, or he is lamentably careless in the correction of his proof-sheets. Either his MS. is so badly written that the printer is unable to decipher the words and figures, and consequently unable to decide which is the correct date or statement; or he has not time to do justice to the work he has undertaken, by carefully correcting the printer's proofs.

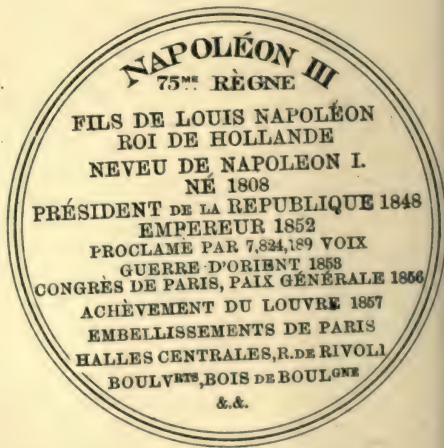
Every schoolboy prides himself in showing his friends his prizes; while nothing is more galling to a lad than to find the information he has obtained by reading a book at home differing from that contained in the book from which the schoolmaster is asking questions; nothing more vexing than to find that through these differences he has lost the prize.

It is curious how some authors on given subjects fall into the very errors which they urge others to guard against. Our friend and fellow-member in this society, Dr. Inman, as most if not all of us are aware, has recently published an elaborate work on *Ancient Faiths Embodied in Ancient Names*. On p. 20 of this work he writes, "Another diffi-

* See list of authorities referred to, at end of *Synopsis of English History*.

culty in ascertaining the meaning of certain proper names arises from the critical canon, 'that if a word can be explained in the language of the persons using it, that such explanation must be held to be the good and true one, against all others.'" In a foot note to this remark, our friend speaks of the "following paragraphs" being "inserted in answer to strictures which were made by an *individual* on the author's views" when reading his paper before this society. He then advances, "that if in the language of Northmen, Danes, Saxons, Germans, etc., a word could be found which seemed to explain another, that such explanation must take precedence of any attempt to trace a particular word or name to a Phœnician, or to any other source more remote than the comparatively modern one." From these remarks, and the sequence in the book, we can only gather that our author, of course, is only satisfied after the utmost research and scrutiny for the origin of his statements. I shall not attempt to follow him into the depths of the Hebrew, the recesses of the Sanscrit, or the abyss of the Phœnician languages, but simply confine my observations to two paragraphs, when I think I shall show that authors do, sometimes, fall into the errors they say their readers should guard against. Of the difficulty of knowing the correct way of spelling names, Dr. Inman writes (p. 14), "bad enough as it is in our language," it "is increased greatly when we try and reduce to writing the names current in lands to whose tongue we are strangers." "We have changed the foreign spelling of proper names to suit our own tongue, *e. g.*, Buonaparte into Bonaparte, and Louis into Lewis." I do not mean to dispute the Doctor's knowledge, nor question his ability to teach us as to the origin of names, but he certainly in this case has jumped at a conclusion. He has "a word" that "could be found which seemed to explain another," without diving into the "Phœnician."





IV. BONAPARTE.

Bonaparte

V. BUONAPARTE.

Buonaparte

In a small pamphlet containing the fac-similes of Napoleon's various signatures (Plate II., Figs. 4 and 5), taken from Mr. Sainsbury's remarkable collection, we find, p. 5,

"In the *Memorial of St. Helena* (vol. i., p. 132, French edition, 1823), Napoleon is represented to state, that during his youth he signed 'Buonaparte,' after his father, and did not alter his signature until after he was promoted to the command of the army of Italy, to which he was appointed General-in-Chief, February 23, 1796, and continued to sign Buonaparte up to the 29th of the same month. His principal object for omitting the *u* was to shorten his signature"

The medal struck in France on his taking the command has the *u*, subsequent issues are without it (Plate II., Figs. 1 and 2). We therefore see that the great Napoleon "Anglicised" his name himself, and not we Englishmen, to suit our tongue. "Lewis," I think all will agree with me, is not the Anglicised, but the English and Welsh, way of spelling Louis, or Ludwig, just as John is of Jean or Johann.

Then again, p. 10, Dr. Inman, writing of corruptions of names and signs, states, "'Wavertree,' near Liverpool, has become 'Watery.'" I fear the author has in this case, as well as in the former, omitted to dive into the "Phœnician," but has jumped at a conclusion for simplicity.

Gregson, in his *Fragments of Lancashire*, gives a fac-simile of a map of the County, published 1598, where we find "Wartree" marked, but in a subsequent map we find it is printed "Wauertree." Then, as Dr. Inman states, p. 12, "We must consider that U and V are essentially the same," we come to the corruption, "Wavertree," and by the pronunciation being "Wartery," we cannot but infer that the inhabitants have adhered to the "Phœnician" mode of articulation, though the spelling has been "Anglicised."

Baines, in his *History of Liverpool*, p. 77, writing on Toxteth Park, says—

"One small portion of this Park still remains, which has been pre-

served by the generosity and public spirit of a man whose name will always be honoured in Liverpool (R. V. Yates), from which we may form some faint idea of the scenery of Toxteth Park in the days of its glory."

These *remains* of the Park's past magnificence were plain green fields in 1840! which will be seen by referring to Benson's Map of Liverpool, published in 1841. All the beauty "which has been preserved" owes its origin to the late Sir Joseph Paxton, who laid out the Prince's Park!

We have now, in a brief space, glanced at the various causes of the pollution of the river of History. The errors referred to in the first section might be easily obviated, if men who may have their works classed under that heading would, I might say, reflect a little more, and not be quite so argumentative, to show how far logic can lead.

The second class of errors will always exist; pretenders, personators of deceased persons, will always rise up; and ambition will sometimes require that both facts and dates be subverted, that the end may be gained.

But errors of the third section need not occur, more particularly with modern writers, who undertake to record events of their time. For example, Alison has no excuse for fixing the date of the Duke of Wellington's death as 18th September, 1852, when he has the newspapers of the 15th, and the tomb in St. Paul's, London, to prove that the Duke died on the 14th of that month.

Nor is the following error excusable. Writing on the Spanish succession treaties, the same author states, "The Duke of Saxony and his male heirs were called to the succession, failing Philip V., the existing sovereign, and his *male* heirs," (vol. viii., 1815-52, p. 594.) For this remarkable statement, the Baronet refers us to *L'histoire des Traités*, vol. ii., pp. 99, 105; while, in the first place, there never was a Duke of Saxony, that State being an

Electorate until Napoleon I. created the Elector, Frederick Augustus III., King, 1806; and secondly, the House of Saxony never claimed any right to the Spanish throne; but the Duke of *Savoy* did; and I venture to state that all reliable authorities will show that it was the Duke of Savoy, and not the Duke of Saxony who was to have the succession to the Spanish throne.

So that even Alison must be classed among careless writers, *literati*, who, writing on a particular subject, are not sufficiently particular, — are not prompted by their own instincts—to verify what they are writing about, before going to press.

Others appear to be blind as to who are, and who are not, trustworthy authorities; “they seem to think that because some man, calling himself a historian, makes a statement, we have no right to question it, *magister dixit*,”* but, — like obedient schoolboys, who must do as they are told, — believe all they read without asking a question, and accept as truth all they meet with, as the easiest method of becoming historians themselves.

* *The Lost Prince*, p. 144.

SEVENTH ORDINARY MEETING.

ROYAL INSTITUTION, 25th January, 1869.

THE REV. CHRISTIAN D. GINSBURG, LL.D., PRESIDENT,
in the Chair.

Mr. John Cape was unanimously elected an Ordinary Member.

The following paper was read :

ON CAPITAL AND SECONDARY PUNISHMENTS.

BY THE REV. W. L. CLAY.

THE controversy on capital punishment illustrates in a very striking manner how completely the general public thinks, or rather abstains from thinking, under the influence of texts, sentiments, prejudices, etc. The foremost advocates for abolition, Professor Mittermaier for example, are of course forced to face the matter on purely utilitarian grounds. In like manner the Commission, which reported on this subject three or four years ago, very wisely forbore "to enter into the abstract question of the expediency of abolishing or maintaining capital punishment" — (by the way, can "an abstract question" be also "a question of expediency"?) — for whatever "differences of opinion existed among them," they were practically shut up to the duty of gathering evidence by which to judge whether secondary punishments could be substituted with due regard to the public welfare. Now, of course, the House of Commons would have put aside abstract reasonings as lightly as Scriptural arguments, or sentimental appeals. And yet the *data* on which the matter would be seriously discussed, in Parliament or elsewhere, are not the *data* on which most people form their opinions. The Noachian maxim, for instance, "Whoso sheddeth man's blood, by man shall his blood be shed," is quite enough for many; whilst the abolitionist caps that verse to his complete satisfaction by citing the case of the first murderer, of whom it was distinctly said, "Whosoever

slayeth Cain, vengeance shall be taken on him sevenfold." Others, who are above the practice of carrying scriptural passages in their memories to serve as spiritual talismans for their protection against error, and who have sense enough to see that a text broken off from its context, and veneered with a modern moral of which the ancient writer never dreamt, is not "an argument from the Bible," nevertheless denounce capital punishment as "unchristian." They have probably learnt to do so under the unconscious influence of two different ideas. In the first place, they have accepted the popular conception of Christianity as all softness and gentleness, blind — as so many are — to the other side of His character, who never shrank from the austere necessity of sending "not peace on earth, but a sword"; and, in the second place, their repugnance to an execution rests, in a great measure, on the feeling that it is a fearful thing to run the risk of consigning a fellow-creature to everlasting torment. It is probable, however, that this repugnance will lessen, and perhaps vanish, when the terrible sternness of divine love obtains fuller acknowledgement, and the heresy, already moribund, concerning an endless Hell is finally dead and buried. When, however, the objection is not religious, it commonly springs from an irrational liberalism, which finds vent in such phrases as "a relic of barbarism," "a disgrace to civilisation," etc., etc. Probably great stress is laid on "the sacredness of human life;" one of those metaphysical entities which greatly influence the popular mind, but only hinder and mislead the legislator. Besides, if the gallows be retained only for the prevention of murder, this particular argument cuts both ways. Of course, to appeal to such a metaphysical entity as "the sacredness of human life," is to snatch the question out of the region of expediency, and to decide it on "transcendental" principles; and this method saves so much trouble that it is a universal favourite.

Nevertheless, every social and political problem must, sooner or later, come down from transcendental cloudland to utilitarian *terra firma*. "Utility" is, at any rate, the only final court of appeal to which questions of social justice can be carried; and it is sheer waste of time, therefore, to discuss the subject of capital punishment on any other grounds than this — Would the abolition of the gallows promote the general welfare of the community, or not?

Still, when the ground has been cleared of perverted texts and *a priori* assumptions, the Benthamite has a very difficult problem to solve; and it is solely to accumulated experience that he can look for a solution. Under a true instinct, the present generation is seeking to make punishment *proportionate* to crime; and it is probably on this ground that death as the penalty for murder — the highest possible penalty for the worst possible crime — retains the approval of a great part of the English public. This desire, to most minds at the present day, would seem the simple dictate of "a natural sense of justice." But what is this natural sense of justice? Will it serve as a foundation on which to build laws? Or is it a shifting, uncertain thing? Is it possible to define conscience, either the individual or the national conscience, otherwise than as the faculty by which, sooner or later, after countless aberrations, we judge with approximate truth between right and wrong. *Naturally* we have no sense of justice, but only a capacity for acquiring such a sense. Our ideas of justice approximate, as generation succeeds generation, ever more closely to truth; but progressive as the ideas are, and on the whole in the right direction, they are liable nevertheless to back eddies. At the present day they oscillate, though let us hope with an ever lessening swing, between selfishness and sentimentality. The prevalent tendency is towards softness, but an Indian mutiny, a Jamaican outbreak, or a panic about garotters

causes an immediate reaction. In the main, however, taught by that slow accretion of experience which we call progress, and which is constantly generating new and better ideas, the national sense of justice develops and is rectified. But it is the function of the legislator not merely to follow and interpret, but often to anticipate and even correct public feeling, and then he requires an independent test of what is right. The utilitarian alone has ever succeeded in supplying such a test, and the modern history of our penal system strikingly illustrates his claim to have done so. A hundred years ago, the dominant idea as to punishment in England was the fallacy—than which none, at first blush, ever looked more like a truism—that the greater the penalty the more surely it deterred from crime. It was an obvious corollary from this doctrine, that the punishment should be sharpened when the offence was easy and the offender difficult of detection. It was quite possible, people flattered themselves, to balance the easiness of the crime and the difficulty of detection by the sternness of the punishment. These notions commended themselves to the national, or, at any rate, to the parliamentary, sense of justice, and were deliberately advocated by the first moralist of the day, Archdeacon Paley, though they obliterated all proportion between the crime and the punishment, and assigned the same penalty to cutting a hop-band and cutting a throat. It was indeed in the interests of “society,” *i. e.*, on the ground of “utility,” that Paley defended these atrocious doctrines; but there was one huge flaw in his logic,—he forgot to include the criminal within the pale. When Bentham remedied this error, when he claimed for the offender that his happiness should not be destroyed one whit beyond what would confer more happiness than he lost on the community at large, the Paleian doctrines fell to the ground, and the principle that the penalty should be graduated in due proportion to the offence was firmly established.

To hang men for cutting hop-bands was obviously to cause more suffering than the prevention of the crime obviated. Of course, very few people who hold the modern principle concerning proportionate punishments suspect that they are, in so far, utilitarian philosophers. They have only a vague belief that every transgression should receive a *just* measure of punishment. As to what constitutes a just punishment they have no idea, and in the attempt to solve the question would flounder hopelessly into metaphysical quicksands.

Paley's doctrines, however, did not in actual fact fall before Bentham's. The outbreak of philanthropy at the beginning of the nineteenth century was not the direct result of discussion, or the work of any prominent leader of thought. As in the case of every other great "progress in rationalism" recorded by Mr. Lecky, the movement was emotional, rather than intellectual. Men found a new tone of thought and feeling prevalent among them, to the influence of which they succumbed without conscious intellectual effort. The function of the thinker is commonly not to cause such changes of opinion, as to justify them when effected. In the eighteenth century there was no serious difficulty, — though human pity did break out occasionally in the jury-box, — in procuring convictions on capital charges, though the offences were trivial; but, in the nineteenth century, judges, juries, witnesses, and prosecutors were combining all over the country, in "tacit conspiracies," to mitigate the penal code. To what was the change in the national sense of justice due? I think to a medley of causes. The career of John Howard had forced on the public conscience an acknowledgment of the truth that even criminals are entitled to some measure of mercy. The failure of wholesale hangings to repress crime was yearly becoming more patent. Beccaria's favourite doctrine, that certainty is far more effectual than severity of punishment, had found

wide acceptance. Rousseau's ideas, moreover,—and Rousseau is the true father of sentimental philanthropy, — were permeating even circles in which not a line of his writings had ever been read. But the chief cause of all is to be sought in that great religious wave, — Wesleyan in its crested advance, Evangelical, in the mighty afterflow, — which was passing over the land. These causes were sufficient to account for the change, without connecting it, as Mr. Lecky does, with the waning away of the old belief in hell. Yet this notion is certainly plausible. People who could realise the belief that the naughtiness of a marred child and the crimes of a Cæsar Borgia were destined to incur the same ineffably tremendous punishment, would not shrink from making the gallows the penalty for assassination and turnip-stealing alike.

But, however brought about, the new school of thought, or rather feeling, was strictly utilitarian, and therefore, let me add, strictly Christian. "The greatest happiness principle" was enunciated in other terms eighteen centuries before Bentham, by One Who proclaimed that His Father was "no respecter of persons," that He had *equal* love and *equal* care for all men; from which doctrine it plainly followed that the burglar and the harlot had precisely the same rights within His *Catholic* Church as the saintliest ratepayer, *rights* which entitled them to be treated with ineffable tenderness, if that were possible, but to be crushed with ineffable sternness, if that were necessary.

One of the first deductions drawn from the new notions was that punishment should be reformatory. "Utility" was perfectly indifferent, as indifferent as Christianity, on the score of vengeance. It cared only for the welfare of "society," the criminal himself being included in "society."

As the abhorrence of our bloody code spread, and the practice of acquitting culprits in defiance of the plainest

evidence, rather than send them to the gallows, grew more frequent, crime, with the chances of impunity thus multiplied, rapidly increased. Sixty years ago, it was notorious at the Old Bailey that the London thieves preferred to be indicted on a capital charge. The stolid obstruction, which had proved more than a match for mere philanthropy within the walls of Parliament, melted away when it was demonstrated that the repeal of hanging acts was necessary to the repression of crime. To maintain, however, that the present reluctance of the legislature to abolish the gallows as the penalty for murder, is of a piece with the irrational obstinacy which Romilly encountered, is simply to beg the question. The principle that the punishment should be proportionate to the crime, *i. e.*, that the culprit's loss should not exceed the community's gain, cannot possibly be applied to this case. It is preposterous to argue that the general benefit attained by the greater security given to life does not overbalance the sacrifice of a few wretched homicides.

"The greatest happiness principle," then, prescribes the right limit to which severity may be carried, in other words, the *maximum* of punishment. The *minimum*, the extent to which leniency may be safely indulged in, is determined by another principle,—namely, that all punishment, beyond the point at which the preventive efficacy is carried to the highest pitch, is useless cruelty. It is on this second principle alone that the abolitionists of hanging can maintain their cause. If they can shew that a secondary punishment can prevent murder as effectually as the gallows, they have undoubtedly proved their case. But to determine the *minimum* to which punishment must be reduced is a very difficult problem, as a few considerations will make abundantly clear.

(1) From what has already been said, it is plain that no scale of punishment attains the *maximum* of repressive power of which the public conscience condemns the cruelty and

impedes the execution. The legislator, therefore, has to study the national sense of justice,—and this is by no means an easy study. It is, for instance, at the present moment very difficult to decide whether in England the chance of being hung, *minus* the chance of escaping, owing to the very general repugnance felt against the gallows, is, or is not, more deterrent to murderers than the chance (with no such deduction) of some secondary punishment, say penal servitude for life. Let x and y represent respectively the deterrent power of hanging and penal servitude for life, supposing the chance of incurring each penalty to be precisely the same. Now there is no doubt whatever that death is more feared than perpetual imprisonment, or, in other words that x is greater than y . But, from the deterrent power of x , a deduction has to be made, owing to the uncertainty of infliction, occasioned by (1) the bias towards acquittal in the minds of the jurors, if death, and not some secondary punishment, is to be the result of an adverse verdict; (2) the chance of extorting a reprieve from Downing-street. Call this increment of uncertainty z , and then the statesman's problem is to find out whether $x - z$ is greater than y . I am convinced myself that it is greater, and that it tends, by the continual decrease of z , to grow greater still. The conviction rests, I allow, upon nothing but an impression (in which I may be mistaken) that the *irrational* dislike to capital punishment is subsiding. One thing, however, is quite clear, that there is no growing difficulty in the way of procuring and carrying out sentences to death for murder. By a comparison of the returns for the three years, 1865, 6, 7, I find that the coroners' verdicts of murder have been 227, 272, and 255 in each of the three years respectively; the commitments for trial, 60, 55, and 94; the sentences to death, 20, 26, and 27; the executions, 7, 12, and 10.

(2) To make the penal code, however, adequately express

the public conscience is not by any means the sole task ; there are other ways besides the recalcitrance of jurors, and the compressibility of Home Secretaries, in which over-punishment militates against the repression of crime. The ruthless code of our forefathers had sunk below the *maximum* of efficacy long before their growing scruples had begun to hinder its execution. The deterrent power, so far from varying directly as the severity of penal enactments, after a certain point is passed varies inversely. It is an odd but an indubitable fact, that the sense of justice of the criminal class must also be consulted. To outrage their public opinion is to generate recklessness ; and besides, severity, to impress, must be rare. Familiarity lessens fear, as surely as it breeds contempt. "In proportion," says Beccaria, who was the first to point this out, "as punishments become more cruel, the minds of men, as fluid rises to the same height as that which surrounds it, grow hardened and insensible, and, the force of passion still continuing, in the course of a hundred years the wheel terrifies no more than formerly the prison." It is quite possible, therefore, that on this ground death may not be the most deterrent penalty that could be desired for murder, because it is too severe. But the evidence taken before the late commission does not favour this conclusion in the case of England. Hanging still commends itself to our criminal class as the righteous retribution for murder. It is beyond doubt too that the fear of the gallows has increased, and is increasing. The modern murderer may screw up his courage to "die game," but he cannot emulate the hilarious bravado with which the old highwayman went to Tyburn.

(3) Under certain circumstances, therefore, it may be the duty of the legislator to relax the penal code in anticipation of the nation's will. Yet the case must be very clear to warrant such a course. The fear of punishment itself is not

so deterrent an agency as the common abhorrence with which the crime is regarded, an abhorrence in which the criminal himself shares, especially in the case of rare crimes. If, by increasing the penalty, the legislator can increase the abhorrence, it is, with certain qualifications, his duty to do so. By affixing a shameful penalty to the offence, Parliament probably could quicken and purify the popular conscience in the matter of bribery; and if the new bribery law proves inadequate to the suppression of the offence, this is certainly the next experiment that ought to be tried. For a nation, if satisfied with its criminal laws, soon learns to measure the heinousness of an offence by the penalty attached. To lower the penalty is to lessen the detestation of the crime. One, and that perhaps the strongest, influence which deters from murder would certainly be weakened by the abolition of the gallows.

Upon the whole, therefore, now that we have got the one change that was most urgently needed, I mean private executions, the right policy in England at the present time seems to be this:—restrict the death-penalty to murders of the worst kind; greatly narrow, if not altogether take away, the power of the Crown, or rather of the Home Secretary, to remit or alter the sentence, unless fresh exculpatory evidence turns up after the trial, and then wait and see whether the cry for the abolition of hanging waxes or wanes. If it waxes loud, then a secondary punishment must of course be tried as an experiment. It would only be an experiment, to be continued, or not, according to the results. The people would probably tolerate a slight increase of murders rather than give up their sentiment; yet a marked increase would speedily be followed by the re-erection of the gallows. Sentiment withers at the first touch of panic, and the “natural” sense of justice tallies, in the long run, with the teaching of

experience. But as yet we are not prepared for the experiment. We know almost nothing about the proposed substitute—penal servitude for life. It has never yet, I believe, been inflicted in England to the uttermost. The hope of some remission has always been entertained, if not distinctly held out. Would not the attempt to enforce it too often breed insanity, or drive to suicide? Or the successive relaxations necessary to obviate this danger might, in the end, render the confinement very slightly penal. Again, while death is feared almost equally by young and old, final loss of liberty has much slighter terrors for the latter. For an old pauper felon, penal servitude for life would hardly be a change for the worse; yet it would be an awful sentence to inflict on a lad.

Mr. Lecky regards the abolition of capital punishment as one of the most certain triumphs in store for Rationalism. It is my own belief too that the gallows will eventually fall into disuse, yet my reasons for that belief somewhat differ from his. He has, it seems to me, overlooked the consideration that true Rationalism on all social matters drifts away from the sentimental to the utilitarian view of things; and utilitarian policy, as I have striven to show, is quite ready to tolerate the hangman; while “society,” on the other hand, is by no means ready to pay more than a very low price for the indulgence of sentiment. As, however, civilisation advances, the detestation of all crimes, and especially of heinous crimes, will increase, and that detestation, as I have already noticed, is one of the most potent deterrents. Its slow growth will, with perfect safety, allow of a slow progressive mitigation of the penal code.

Though it was not the main purpose of this paper to discuss secondary punishments, yet I will venture to trespass

on your attention a few minutes longer in order to enumerate what seem to be the chief *desiderata* in the penal system of the future.

The key-stone of that system must be a clearly drawn distinction between casual and habitual offenders. It is obvious that the elaborate reformatory discipline suitable for the latter would be thrown away on the former. They have no criminal habits which need eradication, nor do they require a slow painful training in self-restraint and industry. Some simple method of punishment, severely penitential for them and exemplary for others, is all that their case demands.

A definition of an habitual offender can easily be given. The crime must be an offence against property, and there must have been a previous conviction. Obviously, a delinquent of any other kind (with a few rare exceptions, which I need not detail) is not a felon by trade.

How to deal with casual delinquents is a very difficult problem, as the consideration of the simplest case will show. For example, a few weeks since, an industrious and generally steady labourer in my parish fell in with two old acquaintances, whom he had not seen for years, and who took him to the public house and treated him. Of course he got drunk, and when he was turned out at midnight he had the misfortune to stumble up against the policeman, whom, it is needless to say, he forthwith assaulted. Next day he was "had up," sentenced to pay a fine and costs, which together amounted to fifteen shillings, a week's wages; and if he could not pay, the alternative was a fortnight's imprisonment. The poor wife appealed to me for help. But it was obvious that if I were to make a practice of paying in such cases, it would fare ill with the Rainhill policemen. So I compromised the matter, and paid the costs, leaving the delinquent to pay the fine, which he

contrived to do, though the poor children, I fear, had to "clam" that week. But, I would ask, How is it possible to deal with such cases satisfactorily? The punishment is an even greater injury to society than the original offence. I confess that I am unable to make more than two suggestions; first, that the absurd and mischievous custom of piling costs on to fines should be done away with; and, secondly, that the publican, in whose house the delinquent got drunk, should share the punishment. I am disposed to think that these two amendments constitute all the improvement that can be effected in our penal system, with reference to the casual delinquencies of the manual labour class. Some good might be done by allowing the fines to be paid by instalments, and also, perhaps, by devising a better method of bail or suretyship. Our modern method of bail differs widely from that of our Anglo-Saxon forefathers. The old English law required every freeman to be a member of a tything, or, as it was called in some cities, a ten-men-tale. This tything seems to have been a sort of mutual assurance company among ten neighbours, who were required, if one of their number was charged with an offence, either to procure his acquittal at the hundred-mote, or shire-mote, or else to pay his fine. It has been a fancy with some writers on criminal law that a similar system might be re-established now; but a closer acquaintance with the Anglo-Saxon tything dispels the notion. We should have to re-establish, in the first place, the custom of paying fines, not to the State, but to the injured party, for the old tything men shared not only in the loss when a member was fined, but also in the gain when a fine was to be paid to him. Again, what could we possibly do with the "lawless men," who could not find admission into a tything? for the short and easy method of our ancestors would not be possible now. The outcast in early days was forced to find himself a "lord," whose "man" (that is, vassal or serf) he became, the lord,

on his side, incurring the same responsibilities as the tything. If, however, he failed to procure a lord, or if the lord, afterwards, finding the man cost more than he was worth, cut him loose again, then, if again convicted, and unable to pay his fine, any one who chose to come forward and pay it might take him for a *witetheow*, or slave (and I believe his family also); and if no one came forward to do so, then he became the slave of the Crown, or of the Crown's officer, the *gerefa*, or else, and this I fancy was the commoner case, the poor wretch was simply hung. I am afraid, therefore, that we can hardly imitate the wisdom of our ancestors, and revive the old law of suretyship, though probably our modern system is capable of useful amendments.

With regard to casual delinquents who belong to a wealthier class than that which lives by manual labour, it seems to me that fines might constitute the general, nay almost the sole, secondary punishment. A stupid law, like our own, which has only one uniform rate of fines for rich and poor alike, is obviously a most unfair law. What we want, of course, is a scale of fines graduated according to the wealth of the delinquent, a scale which for a drunken assault would mulct Hodge to the amount of, say twenty shillings, and the Marquis of Blankshire, say ten thousand pounds. I believe that such a graduated scale of fines is not only feasible, but even probable, if ever the Hodges come to have the same control over our penal laws as the Marquises have had hitherto.

In dealing with habitual, instead of casual offenders, we are met by a totally different class of considerations. How to deal with them is a solved problem. We have only to induce the public to carry out principles, the soundness of which has been demonstrated.

The first step is to sift away the chance offenders from the regular criminals. This is easily effected, in the way I

have already indicated. The first offence against property may be regarded as a casual lapse, and dealt with by simple imprisonment in the common gaol. Every subsequent offence should be regarded as proof that the offender had hardened into a regular criminal, and should involve a sentence to penal servitude, that is to reformatory imprisonment in a convict prison. Reformatory training must needs be so elaborate, and requires men of such tact and vigour to carry it out successfully, that it would be well at once to set aside the convict prisons, with their well paid and carefully trained officers, entirely for the regular felons, leaving chance crime, even of a very heinous kind, to be dealt with in the common gaols. This appropriation of the two classes of prisons is already partially effected.

The secret of reformatory discipline lies in securing the cooperation of the prisoner himself. Naturally the prisoner kicks against his punishment, especially against the work; and there is no way of *compelling* submission, except by physical suffering,—that is, by short commons, chains, or the lash,—all of which harden and brutalise the convict, and probably also break his health. But the will of the prisoner is enlisted on the side of his reformers, by making his fate, as far as possible, dependent on himself; and this is accomplished by the simple device of turning the time sentence into a labour sentence,—in other words, by allowing him, through industry and good conduct, to earn a remission of some part of his sentence. This is the basis of the “mark system,” as now applied in our convict prisons. The prisoner, on his admission, is informed that he will serve out his full sentence, unless before its expiration he has earned a certain number of marks. This number, according to the present law, can just be earned when a quarter of the sentence has still to run, and when earned, entitles the convict to his immediate release on a ticket of leave. This system, therefore,

stimulates the convict to labour and self-restraint, and the stimulus is heightened by other means, of which the following is the chief. The period of incarceration is broken up into various stages, the earliest being made as penal as possible, and the later, by comparison, pleasant. Thus, in the first stage (I speak with reference rather to the Irish than the English convict prisons, the system in the former being rather more perfectly developed), the prisoner is put into a bare cell; a hard mat is his bed, his diet is little more than bread and water, his employment is the most irksome that can be found, probably oakum-picking, and his solitude is unbroken, except by the periodical visits of the warder. It is explained to him that until he has earned the marks prescribed for that stage, that is to say, picked a certain quantity of oakum, his plight will remain unaltered. The probable result is, that, after sulking a day or two, he sets to work with a will, and soon earns his promotion to the next stage, where his lot, in every respect, is slightly alleviated. Thus, under the constant stimulus of hope, he works his way upwards, from stage to stage, till at last he arrives at the workshop or farm, where the restraints under which he is placed are almost entirely moral.

In each stage of his progress the prisoner is trusted with more liberty. This is one of the most important items in the scheme, for it tests at every step the worth of the convict's reformation. Good conduct in a solitary cell counts for very little, for the opportunities for misconduct are so few; but good conduct on the prison farm, where the convict has almost as many facilities for misbehaviour as an ordinary labourer, is obviously a very fair criterion of amendment. Nor does the process of testing end here, for when the convict is let out on ticket of leave, he is let out on trial, and is liable to be sent back to prison for very slight misconduct, such as keeping felonious company, or indulging in idleness.

In this system, physical punishments are hardly ever needed. Forfeiture of marks is sufficient. If a man loses, say, 300 marks out of 2000 he has earned, he is put back to the same stage as he occupied when his marks stood at 1700, and has his work from that point to do all over again. It will easily be understood that marks once earned are not lightly thrown away.

This is, of course, but a rough sketch in outline of the "mark system." I merely indicate the main principles on which it rests; it would be impossible to enter into detail. But, however perfect convict discipline may be, it will fail, unless as part of a complete system for the repression of crime. At present crime is a very lucrative profession. A crack thief or an accomplished burglar can easily make £1,000 a year. Felony, as a trade, will never be suppressed, unless the trade is made so dangerous and unprofitable as to lose its attractions. By the adoption of one or two very simple principles, and their rigid enforcement, this end might easily be attained.

The professional felon, that is the offender who has already been once convicted of an offence against property, must forfeit many of the rights of citizenship. The law, and not the judge, must henceforth fix the term of his sentences. For the second offence, the sentence must be, let us say, three years of penal servitude; for the third, six years; for the fourth, nine; and so on. These sentences the judge must have no power to diminish, though he may be left free to increase them. Such a change in the law would doubtless necessitate the establishment of a court of cassation—and such a court is already needed on other accounts. But the law, and not the judge, must fix the sentence of the regular felon. The penal laws of man ought to be as rigid as the penal laws of God. The system can never work properly, while the idiosyncracies and variable humours

of the different judges are allowed to play fast and loose with it.

Of course, to carry out such a change in the law, some change will be needed in our police. They will have, among other things, to establish a complete registration of felons, so that, the moment a man has been convicted of a robbery, a statement of his previous convictions may be laid before the court, and then the judge will be shut up to the simple duty of announcing the sentence which the law prescribes. That such a registration of felons is feasible, the best authorities entertain no doubt. With very imperfect means, it was nevertheless, to a great extent, actually accomplished under the *regime* of Sir W. Crofton, in Ireland.

Were such a system rigidly carried out, by a well organised police; were the conditions on which tickets of leave are granted inexorably enforced; were the mark system in the convict prisons patiently carried out, felony, as a profession, might be annihilated within twenty years. I am not sanguine, however, that any such result will be approximated to, either in our time, or in that of our children. The whole matter has been strangely neglected both by Ministers and Parliaments, though the cessation of transportation should have impressed them with a sense of its urgency. One fact alone is very significant. Sir Walter Crofton was, if reports be true, harassed into resignation of his post in Ireland, in spite of his brilliant success, and has since been left almost entirely without employment. Mr. Bruce promises amendments in the execution of our criminal laws, and I believe there has rarely been any minister in the Home Office more competent, or more anxious, to carry out such amendments. But he will not be properly backed up, I suspect, either by the Cabinet, the House of Commons, or the general public. In England, we never do get any decent reform until public opinion is fairly enlightened and eager on the subject; and

on this matter the public is woefully ignorant and indifferent. "The bald-headed man on the top of the 'bus" thinks he understands the subject thoroughly, and therefore never gives it the least serious attention. From the sketch I have given, you will see that "tickets of leave" form a *sine qua non* of the system; yet a solemn deputation of vestries went the other day to the Home Office to demand their abolition. With the public so perversely blind and wrong-headed, our prospects are not very bright. "The Gods themselves," as Schiller says, "cannot fight against stupidity."

EIGHTH ORDINARY MEETING.

ROYAL INSTITUTION, 8th February, 1869.

The REV. CHRISTIAN D. GINSBURG, LL.D, PRESIDENT,
in the Chair.

Ladies were invited to attend this Meeting.

Mr. J. R. Jeffery was unanimously elected an Ordinary Member.

Mr. G. H. Morton, F.G.S., exhibited specimens of sandstone, ground to a flat surface, and striated by glacial action. He discovered them recently at Victoria Park, Wavertree, the locality being at a greater distance from the valley of the Mersey than those previously described by him. The direction of the striations is 12° W. of N. Mr. Morton stated that, in his opinion, the country around Liverpool was, before the deposition of the boulder clay, covered by a great sheet of glacial ice, and that the present contour of the land was mainly influenced by its passage over the surface from the southeast to the northwest.

Mr. C. H. Stearn, referring to the luminous clouds in Professor Tyndall's recent experiments on the chemical reactions produced by light, suggested the probability of the comœ of comets being produced by the same causes.

The following paper was then read :

CONTINUITY IN CIVILISATION,

AS ILLUSTRATED BY THE CONNECTION BETWEEN OUR OWN
CULTURE AND THAT OF THE ANCIENT WORLD.

BY JAMES SAMUELSON.

THE term 'continuity,' recently pressed into the service of Physical Science, by one of its most distinguished votaries, as being characteristic of the scheme of nature, will be found, on reflection, to be equally applicable to the history of mental progress. Naturalists were wont to regard the successive generations of animals, which have at different epochs peopled the globe, as so many distinct creations, separated by cataclysms or other destructive physical changes upon its surface, whereby the whole of one series of living types was extinguished before the appearance of the next; and so, too, unscientific historians have been apt to treat the succession of dominant races, empires, and eras in civilisation, as so many distinct and sharply-defined historical periods, unconnected by any visible links or characters in common.

But the better opinion is now rapidly gaining ground, that, although great and sudden physical changes may have, from time to time, taken place upon the earth's surface, yet the catastrophe has never been so universal as to interfere with the unbroken chain of animal existence, however slender may be the connecting links; and, in like manner, it will be observed that, although the stream of progressive civilisation here and there disappears beneath the surface for

a time, it soon rises again, and pursues its course steadily along, changed only in so far as it is affected by the natural features of the country through which it flows, and the tributaries whereby its volume is increased.

There is perhaps no period in the world's history which, to the superficial observer, presents so complete a chasm in the path of progress, such an entire prostration and overshadowing of the human intellect, as that which has been appropriately designated the "dark ages"; for a storm had been slowly gathering, which at length burst over Europe with such violence as to threaten the extinction of every trace of human intelligence, every vestige of civilised society. And yet it is precisely here that the expression "continuity," first applied by Grove to the physical world, finds a remarkable parallel and illustration in history; for, whilst much that had militated against the continued development of mankind was swept away for ever by the force of the storm, the sterling qualities of our race were not lost, but were only partially obscured, and, with the restoration of peace, they at once reappeared, accompanied by the surviving germs of Religion, Art, Science, and Literature, to become once more developed, with renewed vigour and beauty.

Like some stately denizen of the forest, the empire of Rome had risen and flourished high above its surrounding neighbours, and, spreading its branches far and wide, had overshadowed them with its foliage; but the soil in which the young plant had been set, and the sources whence it had derived its nourishment, failed to support it in its maturer growth. Paganism and slavery were found, then, as at every other period of history, to be quite incompatible with long-continued prosperity. So, although the tree stood there, apparently in all its pristine strength and grandeur, with its cortical framework sound, and many of its branches still

bearing leaves and fruit, its trunk was rotten at the core, the sap flowed sluggishly, and the roots, which should have nourished it, were powerless to perform their functions; when, therefore, the storm burst, it tottered and fell, crushing many of its feebler neighbours in its fall.

Then came the 'dark ages,' when war and bloodshed were the order of the day, and when art, science and literature took sanctuary in the cell of the recluse, and the ancient civilisation of Greece and Rome was extinguished. But the avalanche of northern barbarians, which swept before it the power of the Eastern and Western empires, spreading havoc and devastation around, was not without its beneficent influences. The hardy courage of the descendants of Mannus superseded the effeminacy of the men of Rome, whilst the depravity of her polished women gave place to the rude virtues of the Teutonic matron. Harken to the words of the German historian :

"Gross, stark und schön waren die Deutschen in alter Zeit. Keuschheit, Einfachheit der Sitten, und Freiheit erhielten den Kindern die Kernkraft und Eigenthümlichkeit der Eltern." "Des Mannes liebste Lust war, mit dem Feinde sich zu messen, oder das riesige Wild zu erlegen." "Vielweiberei war bei den alten Deutschen nicht zu finden, Keuschheit hochgeehrt, die Ehe heilig." "Die Frauen waren so treu, dass sie die Gatten selten überleben mochten."*

("Handsome, tall, and powerful were the German people of the olden time. Homeliness of manners, chastity and freedom transmitted to the children all the manly qualities and vigour of the parents. The man's supreme delight was that of measuring his strength in conflict with the foe, or causing the gigantic game to bite the dust. Polygamy was never found amongst the Germans, and chastity was held in high esteem. The marriage tie was sacred; so faithful were the wives, they seldom had the inclination to outlive their husbands.")

Those were the men who, modified and somewhat softened by their contact with the Roman people, overran the con-

continent of Europe, furrowing its surface as a plough, in order to prepare it for the seed-time of a new civilisation.

A short gleam of sunshine broke through the clouds at the close of the eighth century, when Charlemagne, having consolidated the Frankish empire, which reckoned amongst its boundaries the Elbe, the Danube, and the Ebro, commenced the work of reconstruction, by forming roads, by building churches, schools, and abbeys, and by founding the universities of Pavia and Paris. About a century later Alfred flourished. He, too, when he had freed this country from the Danes, brought order out of chaos, and shed abroad the first enlightening rays, which never afterwards were totally obscured. Soon, however, the partition of Charlemagne's empire abroad, and the Danish and Norman conquests at home, renewed the warlike spirit of the nations. The gentle arts of peace were once more laid aside, until the belligerent fever reached its climax, and almost spent itself in the Crusades. Then kings and princes pledged their crowns and their possessions, nobles and knights their lands, and raising, each, as many followers as his means allowed, marched off to Palestine to save the holy sepulchre from Arab desecration.

However little, in a belligerent sense, the results of those expeditions may have been commensurate with their vast proportions and their lavish outlay, they brought about results as pregnant in the history of Europe as they were unpremeditated by the actors. For, in proceeding to, as well as in returning from the Holy Land, the armies of crusaders were compelled to avail themselves of intermediate halting places on the way, to expend large sums of money for the purpose of obtaining transports, arms, and military stores; and, from the temporary traffic thus created, the States of Pisa, Genoa and Florence took their rise upon the Western, and Venice on the Eastern side of Italy;

each, in its turn, securing the dominion of the sea. Those were the shores on which the wrecks of Roman greatness had been stranded ; which, now becoming in their turn oases in the wilderness, sent forth their emissaries of enlightenment on every side, till Europe, like the fabled bird, rose once more from the embers of her former majesty.

The concentration of wealth in Italy, resulting from the needs or prodigality of the crusaders, soon engendered the desire to multiply resources, and guilds in art and handicrafts originated. Florence especially encouraged her industries by the formation of such societies ; and in her higher ranks were found guilds of lawyers, notaries and bankers, whilst the poorer classes had their companies of builders, as well as those that dealt in all the wants of life. Besides the more material employments, there soon arose in Italy a taste for art and learning which was fostered by many of the reigning princes, by the nobles and the wealthy merchants. Florence alone gave birth to Raffaele, Dante, and if not to Petrarch, who resided there, at least to his immediate progenitors, and those three all derived their inspiration from their Roman predecessors, Raffaele in art, Dante and Petrarch in poetry.

It was from such fountains as these that Europe gradually drew the waters of its renewed existence, and the great schools of Paris, Montpellier and Oxford early received their missionaries from the Italian states. The chief subjects which were taught in the public schools during the Renaissance period were philology, logic, rhetoric, music, geometry, astronomy, theology and jurisprudence ; * and as in art and literature, so, too, in the science of law, the most important element emanated from ancient Rome. Of this, more here-

* Hallam, *Middle Ages*, Vol. iii., part 2.

after; but we must not be so completely swayed by our predilection for the higher intellectual pursuits, as to lose sight of the important fact that it is Commerce and the material Industries, which, under the guiding hand of Science, have exercised the most potent influence upon our destinies.

Before the employment of the mariner's compass, the communication between the Mediterranean seaports and this country was maintained through Belgium and the Hanse towns, inasmuch as the commercial emissaries of the new republics had already penetrated as far as the North, and even the Baltic Sea. For the discovery of the magnetic needle we are probably indebted to the very people against whom the armed hosts of Europe were directed during the twelfth and thirteenth centuries—the Saracens; and about the beginning of the fourteenth century it was first employed in navigation by the Genoese, and served to initiate a direct connexion between that people and ourselves.

In the meantime, we had been exchanging with our Belgian neighbours our agricultural products, for the newly-introduced wares of the East; and if it was an exaggerated boast, as Hallam says it was, that in the thirteenth century all the world was clothed from English wool, wrought in Belgium,* it was a most significant one, and shows that our export of raw wool must have been considerable. This was indeed the case; for every effort was being made by the legislature to transfer the seat of the woollen manufacture from Belgium to England. The importation of cloth, and the export of raw wool, had been forbidden by statute as early as the year 1261; and at the same time every inducement was held out to the Flemings to emigrate to England, and improve our home manufacture; so, in the century following, we find that Thomas Blanket had settled in Bristol, intro-

* Hallam's *Middle Ages*, vol. iii., p. 319, and note (twelfth edition).

ducing the valuable article which still bears his name (A. D. 1340), and that, amongst others, the Drapers' Company was incorporated in London (A. D. 1364).

Our chartered Companies resembled those existing in Florence, and other Italian cities, which, as far as I am able to judge, were instituted on the model of the Corporations of ancient Rome. They present, therefore, not only a striking record of the progress of culture and taste in England, as we find on reviewing the dates of their establishment, but also serve to exhibit the relation of that culture with the civilisation of the ancient world.

At first we find them dealing chiefly in the necessities, and perhaps a few of the luxuries of life, as the Grocers (incorporated A. D. 1345), Skinners (A. D. 1327), Drapers (A. D. 1364), Leathersellers (A. D. 1383), Fishmongers (1384), Vintners (A. D. 1364), and Goldsmiths (A. D. 1327) Companies, which took their rise between the reigns of Edward III. and Henry VI. inclusive; and in the latter reign the Brewers (A. D. 1438) started, and were followed, appropriately enough, by the introduction of Pawnbrokers (A. D. 1458). Subsequently, under Edward IV., we have the Ironmongers (A. D. 1462), Merchant Tailors (A. D. 1466), Dyers (A. D. 1473), Clothworkers (A. D. 1480), Pewterers (A. D. 1474), and Wax Chandlers (A. D. 1483), the last-named indicating increased refinement in the higher circles of that day. In the reign of Henry VII., we have the Coopers, Plumbers, and Plasterers (A. D. 1501), denoting the existence of a better class of dwellings, which must have been still further improved in Mary's reign, when, along with the Stationers (A. D. 1557), the Paper-hangers (A. D. 1555) took their rise. A marked advance is again perceptible under Elizabeth, for we have, besides Tilers (A. D. 1568) and Joiners (A. D. 1567), Painters (A. D. 1582) and Embroiderers (A. D. 1561); whilst, to complete our selection

from the list, and with that view descending to the time of Charles I., we find the requirements of the fair sex calling into existence a Company of Pinmakers (A. D. 1636).

In return for the exportation of wool, leather, and some valuable minerals, England soon began to receive, not only the luxuries of the East, as silk, dyes, spices and fruits, but also cotton wool (one of the chief sources of her subsequent prosperity), along with muslin from the same quarter, through the media of Venice and Genoa; and the conversion of the raw materials imported from a distance, as well as of flax, which she received in considerable quantities from Ireland, called into existence our large northern manufacturing towns. Linen was first produced at Manchester, cottons at Bolton, and already in Elizabeth's time we find a large and diversified export trade in Manchester, Bolton, and Kendal cottons, Manchester checks, Yorkshire woollens, Chester cups and trenchers, Sheffield and Birmingham cutlery, iron, and hard ware; and we notice that the towns of Bury, Blackburn, and those of the East Riding were already beginning to flourish.* But it was the great trading and banking corporations, set on foot, first by foreigners, and afterwards by our own countrymen, which mainly conduced to make England what she is to-day; for, thence arose not only her chief trade with her neighbours, but her great colonial possessions. The first of those companies was that known as the Steel-yard, established by the Hanseatic League in 1261, which availed itself of the provisions of Magna Carta to send emissaries to our country fairs and markets. Then followed the Lombard and Florentine bankers, who introduced the system of remittances and exchanges, and, whilst they settled here, thus continued to maintain relations with Italy. The tran-

* A most interesting account of the rise of our inland manufacturing towns, and of the trade of our seaports, will be found in Baines's *History of Liverpool*, chap. viii. (Longmans.)

sactions of the princes of finance even in those early days may be estimated from the fact, named by Hallam,* that when the Bardi of Florence, who farmed the customs of England for £20 per day, suspended payment, our warlike sovereign, Edward III. owed them 900,000 gold florins. Then the Muscovy and Turkey companies opened out our trade with Turkey, Russia, and Persia,† the East India Company‡ with Hindostan, and that, along with the Hudson's Bay Company,|| which was established at a later period, planted those great colonies which far exceed our little island in area, and have carried our arms, our industries, our language, literature, jurisprudence, and our free constitutional government to the uttermost confines of the globe.

But, not to dwell at too great length upon the commercial phase of our subject, we shall next pass on to the influence exercised by the revival of civilisation upon our modern Jurisprudence; for, during their commercial intercourse with England, the Italians naturally consigned to our shores, not alone the fruits of their own industry and enterprise, but some of the vestiges of ancient learning which had lain for centuries mouldering in their cells and cloisters. The ancient codes, too, necessarily produced an effect upon our insular people, differing from that which they had wrought elsewhere. All that was applicable to industry and commerce at once took root here; and when we regard the manner in which our Jurisprudence has been affected by the revival of the Civil Law, we shall have cause to be thankful that the Renaissance occurred at so opportune a period of our history. Concisely stated, the following is the course through which the Roman law was handed down to us. The Pandects,

* *Middle Ages*, iii., p. 340, note (d).

† In Elizabeth's reign.

‡ Originated A. D. 1600, but was subsequently re-incorporated at different periods.

|| Received its Charter, A. D. 1670.

Code, and Institutes of the Emperor Justinian* contained almost all that was worth preserving of the Civil Law. During the disturbances which followed his reign, those compilations were greatly neglected, but they were never completely lost, and always continued to exercise an influence over the empire of the East. Previous to the time of Justinian, the Emperor Theodosius II. had formed a digest of the Roman law, known as the Theodosian Code (A. D. 438), which was revived by the barbarians early in the fourth century, when Alaric II., King of the Visigoths, employed it, along with the works of Gaius (A. D. 169), a Roman jurist of the time of Hadrian, whose Institutes are also included in those of Justinian, to compose a manual known as the *Breviarium Alaricum*. This edition of the Theodosian code kept alive the knowledge of the Civil Law in the West, until, with the growth of the great universities, and the discovery of the old manuscripts in the middle ages, the study of the Roman law was once more revived. Irnerius, we are told,† was the founder of the school of law at the University of Bologna, where he lectured about the year 1120; whilst as early as A. D. 1149, Vacarius, a Lombard, passed over into this country, and delivered a course of lectures on the Pandects and Code of Justinian at the University of Oxford.

And now, turning for a moment to the native system of law upon which that of Rome was to be engrafted, we find that the primitive Anglo-Saxon and Norman methods of dispensing justice, through the County Courts and Courts Baron, had already failed to satisfy the requirements of the masses. Whilst it was felt to be highly inconvenient that suitors should be compelled to follow, from place to place, the Sovereign's tribunal, which was itself a very primitive and patriarchal court of justice (notwithstanding its high sound-

* Flourished A. D. 527-565.

† Mackenzie's *Roman Law*, p. 33, 2nd edition (Blackwoods).

ing title of *Curia Regis*),—so inconvenient, indeed, that a provision was introduced into the great Charter making the Court of Common Pleas stationary, — it was found necessary to send judges,* armed with the highest legal authority (*Justices in Eyre* as they were called), to make stated rounds in various parts of the country, and protect the inhabitants from rapine and plunder, by inflicting punishment upon offenders. These judges, being strangers to the districts which they visited, were glad to avail themselves of that valuable, but still imperfect institution, trial by jury, which had already done good service to the State, and whereof traces are said to have existed even in Anglo-Saxon times. But one of the features in the constitution of juries at that period which rendered them so useful to justices on circuit, namely, that the jurors were chosen on account of their knowledge of the parties to the cause about to be tried, and were themselves also witnesses, militated in some degree against the introduction of the Civil Law; for the common people were accustomed to have their disputes settled upon the decisions of those “good men and true” from amongst themselves, who tried the cause, and by such barbarous modes of arbitrament as were then in vogue; and they naturally regarded with dislike the dicta emanating from an ancient people, with whose customs they had no sympathy. The nobles were equally averse to a system of law which regarded the crowned head as the supreme lawgiver, and thus threatened to diminish their influence; so that, when the jurists of that day sought to introduce the Roman law, and engraft it upon our own, they encountered the usual difficulties which accompany all attempts at legislative or social reform. Soon, however, as the wants and interests of suitors multiplied, it was found that the great principles of law and

* The system originated in the reign of Henry I. (1118), but was not fully developed until Henry II. (1176).

jurisprudence, which the Romans had founded upon long experience, were as suitable then as in the days of Roman prosperity, and as they are likely to remain, so long as human interests and human passions operate in the transactions of every day life.

To trace fully the relations between the Roman law and our present system of jurisprudence would occupy a volume, and all I can attempt in this place is to present a few illustrative examples of the connexion which exists, leaving such of my readers as may desire to follow up the enquiry, to consult the numerous and valuable works which have been published on the subject.*

First, with regard to Real Property. Before the introduction of the Civil Law, we find only one tenure of land, namely, 'tenancy-at-will,' which was uncertain, and subject to some kind of service, either to the Crown (tenancy in capite), or to a feudal lord; and this rendered it a hazardous experiment on the part of the tenant to make any valuable erections upon, or improvements in the soil. Now, every facility is given to men of the most moderate means to build themselves suitable dwellings, for besides the freehold tenure, we have the holding of land upon 'chief rent,' as it is termed, which is practically a sale in perpetuity, subject to a small annual payment; and this is the revival of the old Roman legal custom called "Superficies."† Then we have, in the prescriptive rights of persons who have enjoyed possession of land or easements for a long time, a complete adoption of the Roman "prescriptio," and "usucapio,"‡ rights never dreamt of in England be-

* The titles of the most useful of these will be found in the foot-notes appended to this essay.

† *Institutes of Justinian*, by T. C. Sandars, M. A., third edition, p. 215 (Longmans). Vide also Mackenzie's *Roman Law*, p. 185, second edition (Blackwoods).

‡ Sandars's *Justinian*, pp. 219, 226, 243; Mackenzie's *Roman Law*, p. 186.

fore the introduction of the civil law. Again, the proprietors of the banks of non-navigable rivers possess the same riparian rights now as in the days of Rome, dividing the ownership of the river-bed between them.*

And if we turn to the law of Personal Property, we find the connexion still more striking. The principle of non-responsibility where there is no privity was as distinctly laid down in the Roman law as it is in ours; and that 'Res inter alios acta aliis neque nocere neque prodesse potest,' now applies not alone to our civil law, but also to our criminal jurisprudence, and constitutes the ground upon which hearsay evidence is rejected by our courts of law.† In Equity, 'potior tempore potior jure,'—or as we now have it, 'qui prior est tempore potior est jure,'—is a leading maxim every day applied in practice;‡ indeed it is admitted that our whole system of equity owes much of its excellence to the principles which it has borrowed from the Civil Law.

Again, the most important enactment that has been passed in modern times to regulate the conditions necessary to give validity to contracts, namely, the 'Statute of Frauds' of Charles II., was suggested by a change introduced into the Roman law by Justinian,|| and, in like manner, the chief statutes for disposing of the personal property of intestates, the 'Statutes of Distribution' of Charles II. and James II., were based upon two of the so-called 'Novels,' with which Justinian supplemented his valuable Code.§

* As to Roman law, vide Sandars's *Justinian*, p. 178; as to modern law, Joshua Williams *On Real Property*, p. 301, seventh edition (H. Sweet).

† As to Roman law, vide Sandars's *Justinian*, p. 433; as to modern law, Best *On Evidence*, fourth edition, p. 633, *et alibi* (Sweet).

‡ As to Roman law, Sandars's *Justinian*, p. 216; *Modern Equity*, Smith's *Manual*, eighth edition, p. 27 (Stevens & Sons).

|| Sandars's *Justinian*, pp. 450, 451 (vide especially p. 451, as to completion of a contract by writing).

§ Sandars's *Justinian*, p. 400; Joshua Williams *On Personal Property*, p. 332 (Sweet); Mackenzie's *Roman Law*, pp. 27, 286, 297.

The mandatory, or trustee, now, as formerly, is held strictly liable for the faithful performance of his trust, even though he did not contemplate undertaking a responsibility,* for the law sees, in the acceptance of a gratuitous office, and the confidence induced thereby, a legal consideration of equal importance with that which is known as a valuable one.† And, finally, in the Maritime Code, the ‘Lex Rhodia de Jactu,’ or Rhodian law of jettison, is the foundation-stone of our modern practice in cases of loss sustained at sea; whereby now, as formerly, the ship, freight, and cargo are held responsible, *pro rata*, for the value of merchandise which has been thrown overboard for the safety of all.‡

These are but a few examples, which readily suggest themselves, of the extended application of Roman law, in our time; and if, as Lord Mackenzie truly states, “it must be confessed that Britain has contributed very little to Roman jurisprudence,” || let us hope that it indicates the wisdom and adaptability of the matured law of Rome rather than the ignorance and incapacity of our jurists. And that, too, seems to be the opinion of the eminent Scottish lawyer himself, who says,§ that the Roman law is “the fruit of the researches of the most learned men, the collective wisdom of ages, and the groundwork of the municipal law of most of the countries of Europe.”

It is to the revival of learning in Europe, then, and to the consequent exhumation from their sepulchres, of the Institutes, Pandects, and Code of Justinian, which

* *Coggs v. Bernard*.

+ Sandars's *Justinian*, p. 474, Broom's *Commentaries on the Common Law*, p. 670, third edition (W. Maxwell).

† Mackenzie's *Roman Law*, p. 240.

|| Mackenzie's *Roman Law*, p. 39.

§ Mackenzie's *Roman Law*, p. 43, quoting Tindal, C. J., in *Acton v. Blundell*.

embodied the researches of the old "Jurisprudentes," that we are largely indebted for the stability of the Law of our land.

The task of reviewing, however briefly, the progress and development of Science, during the periods preceding and following the dark ages, within the limits of an essay, seems such a hopeless one, that I cannot approach it without a feeling of great hesitation.

Imagine what must be the scope of that subject, of which a single branch originated with Thales, a Greek philosopher, who flourished 600 years B. C., in the fact, first observed, or at least recorded, by him, that a feeble attractive force is generated by the friction of amber (the material from which the science "electricity" has derived its name); whilst one of its *latest* developments has been the deposition of a copper wire on the bed of the Atlantic, through which messages, bearing upon the most important interests of humanity, are daily passing to and fro between two continents a couple of thousand miles apart; and another, the discovery of an illuminating power which exceeds the sun in brilliancy.

About six centuries after Thales had announced the discovery of electricity, Pliny sought to account for the properties of amber, attributing its attractive power, when rubbed, to the infusion into it of warmth and life; when it was thus endowed, he said, it would attract straws. From this time to that of the European revival, we find little mention of the nascent science, which seems to have remained, during the intervening period, the property of the Saracens,—and is said to have been successfully studied, along with geometry, arithmetic and astronomy at Bagdad, more particularly under Almanzor, who flourished there about A. D. 762,—and to have led to the discovery of that wonderful instrument, which revolutionised and developed the art of navigation, the

magnetic needle. But it was not until the close of the sixteenth century that the science can be said to have had its second birth; and then an Englishman, Gilbert of Colchester, one of Queen Elizabeth's physicians, had the merit of being its regenerator. In order to perceive how completely the researches of that day were interlinked with those of the older philosophers, it is necessary to read their works, or an account of their investigations. The experiments of Gilbert related chiefly to the properties of amber, the loadstone, and other substances which were found to have attractive power; and they were embodied and published in his work, *De Arte Magnetica*. From his day to our own, rapid progress has been made in the development of the science, and stupendous results have been derived from its application to the arts, the other sciences, and commerce.

To Physiology, it lends its willing aid as galvanism. Of Art, the handmaid is electro-magnetism, for she transmutes the baser metals into gold and silver, as it were, and brings the highest works of taste within the reach of every cottager. Of Commerce, too, and social intercourse, she is the messenger, flying like fabled Mercury with winged feet from town to town, from continent to continent, outstripping in her speed the sun himself. Magneto-electricity accomplishes in Light, the same effects her sister has produced in motion; shines with a brightness which exceeds the sun's; and after *he* has set, leaving the earth and ocean wrapt in gloom, then *she* comes forth, and with her steady beam, raised high within the lighthouse chamber, pierces the darkness, and conducts the anxious mariner in safety to his haven!

Although the curiosity of the ancients regarding the properties of matter was easily aroused, yet Physical Science, based upon experiment, can hardly be said to have had an existence in ancient times, and nowhere is this more aptly illustrated than in the history of Chemistry. Of this science,

the ancients knew but little. Aristotle taught that matter of itself possessed no properties, but became endowed with qualities by their addition to it (a theory towards which, in a modified form, we appear to be making approaches in our day); and he divided all material substances into four classes, dry, moist, warm, and cold; the elements being earth (dry and cold), liquid (moist and cold), air or vapour (moist and hot), fire (dry and hot); and an able German chemist, Professor Kopp, of Heidelberg, has recently traced the growth of chemical science from those rude elements.* He shows that whilst the Romans hardly knew the difference between the metals, distinguishing lead from tin as dark and light lead, the alchemists, whose labours date from the revival of learning in Europe, had already acquired a superficial knowledge of them, and believed themselves to be on the high road to the discovery of the transmutation of metals, when they had succeeded in changing the external aspect of iron into that of copper, by a coating of the latter metal deposited from blue vitriol. But with the experimental researches of Roger, and the inductive reasoning of Francis Bacon, a new method of study was initiated; and it was Robert Boyle who subsequently gave to chemistry the character of an exact science (A. D. 1660). Then the constitution of the so-called elements first became the legitimate object of research, and with him commenced that brief but brilliant era in the application of chemistry to manufacturing processes, which has been so conducive to the prosperity of this country.

And what a host of intellectual heroes does the mention of inductive science conjure to our memory! Many, not born in England, such as Liebig, Brandt, and Bunsen, we may not claim as ours; but Newton, prince of physicists, who analysed the solar ray and taught the law of gravitation;

* *The Past and Present of Chemistry.*

Clayton, Cavendish, and Herschel, Davy and Faraday, these are our own; and one bright genius, Hoffmann, though a foreigner by birth, takes highest rank amongst our chemists, both as a teacher of our youth, and as a pioneer of art and science.

But although it may be said that the physical sciences to which England owes so much had taken but slender root in ancient days, yet the great instrument of her prosperity, the steam-engine, was conceived in hoary antiquity. Who does not know that, a hundred and twenty years before the Christian era, as nearly as our records show, Hero of Alexandria gathered around him the students and savans of his day, to show them his *Æolipile*, "Hero's Engine," as the little toy is called, even in our time; and a steam-engine it was, in the truest sense,—the archetype of our own indispensable machinery.

During the dark ages, his invention was concealed by the prevailing ignorance, but it was not lost; for at the beginning of the seventeenth century (about A. D. 1629) this contrivance was revived, at least it was described by Giovanni Branca, an architect of Rome, and was shown working a pair of pestles and mortars. About the middle of that century, Edward, Marquis of Worcester, an ingenious but somewhat eccentric nobleman, produced a number of machines applicable to a variety of purposes, and published an account of them in a work called *The Century of Inventions*.* Amongst the machines which he invented, one was a steam boiler, with appliances for *forcing* water to a great height; and about thirty years later, Savery exhibited before the Royal Society a model engine, which *raised* water by means of a vacuum caused by steam.

In 1705, Savery and Newcomen obtained a patent for

* Published 1663. See *Life of the Second Marquis of Worcester, &c.*, by H. Direks, C.E. Quaritch, 1865.

the first English steam-engine, and from their day to the present it has been improved, and its applications have been multiplied, by numbers of our countrymen. Foremost amongst them rank Potter, Watt, the Stephensons, and Nasmyth; and it is to Nasmyth's steam-hammer that we are indebted for our ability to deal with those huge masses of iron which no human power could have otherwise handled. That instrument it is which has enabled such men as Armstrong and Whitworth to improve our national arms, and the proprietors of our great forges to strengthen our defences, by providing our men-of-war with invulnerable armour. To it we owe, in part at least, that Stephenson, Brunel, and Fairbairn have introduced into our modern architecture and building construction new features of strength and beauty.

In treating the subject of continuity in civilisation, it is, I trust, pardonable that I should have selected illustrations from those fields of the intellect in which I have sought to glean a little during my lifetime; but I feel that an apology is due for the too limited sphere of my observations, especially when I recollect that they are addressed to a Literary Society; and although, I fear, it will be deviating from what, to me at least, is the straight path, yet I cannot refrain from dwelling for a few moments upon the relations of our Language, Art, and Literature with those of ancient civilisation. The Norman conquest had added to the complexity of the first named, composed as it was of the Celtic, Danish and Anglo-Saxon tongues, by superadding the Norman-French element; and the perusal of legal instruments of the time of Edward I. shows that the language of the conquerors was sufficiently well understood to admit of its being employed in the wording of proclamations and enactments which affected the common people.* But the

* Haynes' *Outlines of Equity*. 2nd edition. p. lxxxiii., appendix D. (Maxwell.)

language of ancient Rome had been, and continued to be, that of the intelligence of the land. It was the language of the historian, of the scholar, and of the clergy; and Hallam,* in speaking of the scarcity of libraries and books, says that the library of Glastonbury Abbey, "in 1240, contained four hundred volumes, amongst which were Livy, Sallust, Lucan, Virgil, Claudian, and other ancient writers." It was the language, too, of the legislator; and all important statutes, such as Magna Carta, Confirmatio Cartarum, De tallagio non concedendo, and many others, composed by the ecclesiastics and better educated nobility and laymen, were drawn up in the Latin tongue. In the reign of Edward III., some of the parliamentary proceedings were recorded in English; and during the brief, but socially eventful reign of the usurper, Richard III., the parliament which he assembled ordered that all its statutes should be enacted and printed in our native tongue. Under Elizabeth, we find Bills in Equity worded in tolerably good English, and the decrees endorsed upon them in Latin†; but towards the close of the Protectorate all legal documents were ordered to be written in, and all law books to be translated into, English. The fusion of the Roman with the native element is, however, perceptible in every sentence that can be written or uttered in English; whilst Latin itself, more or less pure, is the medium of communication in some of the learned professions, and is the indispensable accompaniment of a polite education.

And, when we turn to our poetry and drama, we cannot help being struck with the surprising fact, that the two greatest writers England has produced, Shakspeare and Milton, flourished at the time when modern literature was still in the throes of its birth, and that both drew their chief

* *Middle Ages*, vol. iii., p. 460 (quoting Warton).

† Haynes's *Outlines of Equity*, 2nd edition, p. lxix., appendix A.

inspiration from the classic era which preceded the dark ages. There is probably no man, who, by his writings, has exercised so great an influence upon the national intellect as Shakspeare. A nation, we are told, may be judged by its proverbs, but the proverbs of England are the sayings of Shakspeare, quoted daily in all our public assemblies, and always with authority. His plays first elevated the stage from the condition of a raree show, "a Christmas gambol, or a tumbling trick," to "a kind of history," a most powerful educating agency for every class of citizens; and whilst "Coriolanus," "Julius Cæsar," "Antony and Cleopatra," "Timon of Athens," and others testify to the aid he had received from Rome and Greece, some of his more modern dramas reveal to us not alone what the revival of ancient civilisation had done for *him*, but what part Italy had played in that revival.

"LUCENTIO.—Tranio, since for the great desire I had
 To see fair Padua, nursery of arts,
 I am arrived for fruitful Lombardy,
 The pleasant garden of great Italy;
 And by my father's love and leave am armed
 With his good will and thy good company;
 My trusty servant, well approved in all,
 Here let us breathe and haply institute
 A course of learning and ingenious studies.
 Pisa, renowned for grave citizens,
 Gave me my being, and my father first,
 A merchant of great traffic through the world,
 Vincentio, come of the Bentevolii.
 Vincentio's son, brought up in Florence,
 It shall become to serve all hopes conceived;
 To deck his fortune with his virtuous deeds;
 And therefore, Tranio, for the time I study,
 Virtue and that part of philosophy
 Will I apply that treats of happiness
 By virtue specially to be achieved.

Tell me thy mind ; for I have Pisa left
 And am to Padua come, as he that leaves
 A shallow plash to plunge him in the deep,
 And with satiety seeks to quench his thirst.

“TRANIO.—Mi perdonate, gentle master mine,
 I am in all affected as yourself ;
 Glad that you thus continue your resolve
 To suck the sweets of sweet philosophy.
 Only, good master, while we do admire
 This virtue and this moral discipline,
 Let's be no stoics, nor no stocks, I pray ;
 Or so devote to Aristotle's checks
 As Ovid be an outcast quite abjured.
 Balk logic with acquaintance that you have,
 And practise rhetoric in your common talk ;
 Music and poesy use, to quicken you ;
 The mathematics and the metaphysics,
 Fall to them as you find your stomach serves you ;
 No profit grows where is no pleasure ta'en.
 In brief, sir, study what you most affect.” *

The plays of Shakspeare have raised up a host of dramatists and actors, not alone in England, but abroad, whose names will be handed down to posterity ; and although there exists at the moment a craving for sensational scenes and acts, which is perhaps the necessary concomitant of a rapid growth in other departments of the human intellect, we may hope shortly to see arise, if not another Shakspeare, at least some worthy follower of his, to rid the public mind of the exciting fever with which it is infected, and lead it back once more to seek its inspiration in the nobler fields of ancient and of modern history.

And I have no doubt that much might be said, by those who are better informed than myself, concerning the intimate relations between ancient and modern artistic taste, and the

* *The Taming of the Shrew.*

part which the former has played in moulding the character of our people. To say nothing of statuary, in which our finest models are still those of ancient Greece and Rome, or of their modern Italian disciples, we have only to look around us and see how the ancient orders have crept into our ecclesiastical and municipal architecture. The noblest building in this our flourishing and favoured city,* if not in our whole empire, carries back our thoughts involuntarily to the days of the tribunes and the orators; whilst our very dwelling-houses are only just now becoming converted from "square brick boxes," as they have been appropriately termed, into the more elegant villas of ancient Rome. But I feel that the ground beneath me is becoming unsafe; it needs other studies, and tastes other than mine, to appreciate the 'continuity of art,' and I must return to the beaten path, and hasten to my journey's end.

From what has preceded, it is apparent that the chief causes of our material and intellectual development already existed as the elements of civilisation in the ancient world, and that, notwithstanding the irresistible avalanche of barbarism which overwhelmed the whole of civilised Europe, forcing a passage into the very nurseries of human culture, there was still preserved, through the wise dispensation of Providence, all that was essential for the development of a renovated order of society.

We have seen how the commercial enterprise of Tyre and Carthage was transplanted first to the shores of the Adriatic and Mediterranean, thence to our own island. We know how it flourishes to-day under our very eyes, regulated by a maritime code framed in the olden time by the enterprising navigators of Rhodes. We have noticed that the Civil Law of ancient Rome pervades the whole of our modern system of

* St. George's Hall.

jurisprudence; that the compass which guided our pioneers to the discovery of new worlds, and still directs the mariner in his perilous voyages, was the offspring of ancient mathematical learning; that the steam-engine was invented by Hero; and that Thales and Pliny were the scientific predecessors of Cooke and Wheatstone; and, finally, that our purest literature and most graceful art are framed on the models of the classic age.

And what do we find in regard to the highest and most essential feature of our national intelligence — Religion? Is that a child of yesterday? or has it been subject to similar fluctuations, and to the same law of continuity, as the other phases of our progress?

To carry you back to the dawn of religious thought, and attempt to trace the progress of sacred influences in the history of mankind, would here be impossible, although it would be a philosophical inquiry of surpassing interest. Historians have adverted to religion chiefly, though perhaps unconsciously, as the phase in man's nature which has led him to perpetrate the greatest crimes; for has it not been one of the main causes of war and bloodshed, the plea for conquest, and the justification for every kind of cruelty and oppression? Whilst the hollow drum and brazen cymbals of theology are sounded loudly in every chapter of history, the effective operations of religion have been, and continue to be, conducted silently, and without pomp or ostentation.

I will not speak of ours as a religious people; for whilst the countless offspring of vice and poverty swarm unheeded in our thoroughfares, and our great centres of civilisation are abandoned to the votaries of debauchery every night throughout the year; whilst the worshipper passes to and from the House of God each Sabbath evening, lighted on his way by the glare of a thousand taverns; and whilst differing sectaries hate each other with an intensity which, it would

almost appear, the love of Heaven alone seems capable of inspiring; we cannot, I apprehend, make any great pretensions to be called a pious people. Still it is not to be denied that, with all her sectarian animosities, and her sabbatarian eccentricities notwithstanding, England owes much of her exalted position to the comparative purity of her religious faith, and to the freedom of worship which has long been the birthright of her subjects. But at what period was the Pharos raised which has served as our national beacon? Fed upon the sacred oil of all preceding ages, it was kindled by a Divine ray, and shed its brightest and most concentrated beams in the ancient world in the days of Augustus and Tiberias. With the death of its founder a diffusion of its light ensued, and, passing through the mist of the dark ages, it first emerged therefrom with a lurid glare, illumining the funeral pile of martyrs, or reflected with a ruddy glow from the breasts and bannerets of warrior knights. Soon, however, moderated in its ardour, but still all powerful, it fell upon the multilateral prism of the human mind. To few eyes, indeed, is more than one of its bright hues apparent; some perceiving its more refrangible, others its less deflected rays, and each believing stedfastly that the colour of Truth is visible to him alone! Not many are there who can remove themselves sufficiently to observe the particoloured rays merge into each other, so as to form one continuous spectrum; and even those are unable to pass the rainbow colours so rapidly in review, as to obtain an accurate and momentary survey of the whole. Could we accomplish that, I doubt not that the variegated tints would disappear, and we should see reflected the pure uncoloured ray of Truth.

Religion, then, with all that religion sanctions; commercial intercourse, and civil law, art, science, inventive genius, and belles lettres, are, each and all, embraced within this

wide-spread law. May we not safely say the system is a Providential one? and that what we call 'continuity' is an all-pervading method of Divine action, of which we are attaining an imperfect knowledge, step by step?

NINTH ORDINARY MEETING.

ROYAL INSTITUTION, 22nd February, 1869.

The REV. HENRY H. HIGGINS, M.A., VICE-PRESIDENT,
in the Chair.

Messrs. Tinker and Campbell were unanimously elected Ordinary Members.

Mr. Christian Flück was appointed to hold the office of Honorary Librarian until the Annual Meeting.

Mr. Picton exhibited, and made some remarks upon, a very fine celt or stone axe, from Lee county, in the southern part of the State of Iowa, together with some stone arrow heads, from the same district, lately sent as a present to the Free Museum by Mr. Fred. Greer, of Montrose, Iowa.

Mr. T. J. Moore exhibited a specimen, about six inches long, and destitute of hair, of a young kangaroo (*Halmaturus Bennettii*), which had recently been found in the pouch of its mother, and was still living, although the parent had been dead more than thirty hours. It survived the discovery only a few hours, notwithstanding the best nursing that could be given to it. He also exhibited living specimens of the American clam (*Venus mercenaria*), part of a considerable

number imported by Captain Mortimer, Associate of the Society, with a view to an attempt being made to naturalise them on our English coasts. With this object a portion had been forwarded to Mr. Frank Buckland, who had laid them down in his enclosure at Reculvers; and others were intended to be laid down on the Lancashire and Cheshire shores.

An extract was read from a letter from Mr. R. B. N. Walker, Corresponding Member to the Society, dated Gaboon, Dec. 2, 1868, relative to the Lamantin, which he states is highly prized by the natives as food, while they cut up the skin to make whips.

Mr. John Newton, M. R. C. S., then read a paper "On Ventilation," which was illustrated by a series of interesting experiments.

TENTH ORDINARY MEETING.

ROYAL INSTITUTION, 8th March, 1869.

THE REV. C. D. GINSBURG, LL. D., PRESIDENT, in the
Chair.

Mr. Thomas P. Parratt was unanimously elected an Ordinary Member.

Mr. T. Scaife, on the introduction of Mr. A. Higginson, exhibited the process of instantaneous photography by means of artificial light.

The Rev. H. H. Higgins exhibited, and made some remarks upon, several specimens of the "Portuguese Man of War," recently found upon Southport sands, whither they had been driven, far out of their usual latitudes, by the recent gales.

Dr. Cameron suggested the propriety of presenting an address to Mr. Charles Dickens, at his farewell visit to Liverpool, and moved that the subject be referred to the Council, with instructions to act according to their discretion.

The motion was seconded by Mr. Johnson, and carried unanimously.

The following paper was then read :

FOREIGN EYES IN ENGLAND.

By CHRISTIAN FLUECK.

BOSWELL, in his "*Life of Johnson*," gives the following account of a conversation, which took place at General Paoli's dinner-table. On the question arising whether Martinelli should continue his History of England up to their present time, Goldsmith said, "To be sure he should." Johnson: "No, sir, he will give great offence. He would have to tell of almost all the living great what they do not *wish* told." Goldsmith: "It may, perhaps, be necessary for a native to be more cautious; but a foreigner, who comes among us without prejudice, may be considered as holding the place of a judge, and may speak his mind freely." Johnson: "Sir, a foreigner, when he sends a work from the press, ought to be on his guard against catching the errors and mistaken enthusiasm of the people among whom he happens to be." Goldsmith: "Sir, he wants only to sell his history, and to tell the truth — one an honest, the other a laudable motive." Johnson: "Sir, they are both laudable motives. It is laudable in a man to wish to live by his labours; but he must write so as he may *live* by them, not so as he may be knocked on the head. I would advise him to be at Calais before he publishes his history of the present age. A foreigner who attaches himself to any political party in this country is in the worst state that can be imagined; he is looked upon as a mere intermeddler. A native may do it from interest." Boswell: "Or principle." Goldsmith: "There are people who

tell a hundred political lies every day, and are not hurt by it. Surely, then, one may tell the truth with safety." Johnson: "Why, sir, in the first place, he who tells a hundred lies has disarmed the force of his lies. Besides, a man had rather have a hundred lies told of him, than one truth which he does not wish should be told." Goldsmith: "For my part, I'd tell truth and shame the devil." Johnson: "Yes, sir, but the devil will be angry. I wish to shame the devil as much as you do, but I should choose to be out of the reach of his claws."

Now, I might be told: "Why quote this passage from Johnson's Life? You are neither a Martinelli, nor are you writing a history of England." True, I have nothing in common with Martinelli as a historian, neither would I presume to undertake such a task as writing a history of England; but what I have in common with Martinelli as a man, is that I am a foreigner. A foreigner by birth, I stand here, in spite of Dr. Johnson's warning, before an assembly of Englishmen, ready to tell the truth, honestly and without prejudice, of what my "foreign eyes" have seen in this great country. I use the words "without prejudice" purposely, for, unlike Goldsmith, I do not consider it as a matter of course that a foreigner is without prejudice, that he may be considered as holding the place of a judge, and that he may speak his mind freely. As a rule, I have found that foreigners are full of prejudices, no matter whether they be Englishmen abroad or foreigners in England. Highly have I been often amused with the wonderful accounts I have read, in English publications, about continental people and their manners and habits; and astounding are some of the tales which are, as the Germans call it, "gäng a gäbe" on the Continent about England and the English. Johnny Crapaud, with his frog and snail-eating propensities, has not yet entirely ceased to

be a subject of contempt and ridicule for John Bull, either in broad cloth or in fustian; and the idea that French women, on the whole, are no better than they ought to be, seems to be possessed of a cat-like vitality. The German, according to the descriptions we meet with in many English periodicals, is a kind of muddle-headed animal, spending his life in gorging himself with "Sauerkraut and Knödel," swallowing an unlimited quantity of nasty beer, smoking for ever still nastier tobacco, and for a change puzzling his clouded brains with incomprehensible metaphysics. John Bull, on the other hand, is just as correctly portrayed on the Continent. When travelling abroad, he is put down as an overbearing, purse-proud 'milord,' who does not know what to do with his money, and is therefore considered fair game for inn-keepers, valets-de-place, and guides. His daughters are high-cheek-boned, prudish "meesses," wearing blue or green uglies, buttoning themselves up to the chin when out walking, and wearing as little clothing as possible down to their waists at dinner or evening parties, and fainting right away on hearing certain articles of dress called by their proper names. At home, the Englishman is still in the habit of putting a rope round his wife's waist, when tired of her, and selling her by public auction in Smithfield-market. He gets regularly drunk after dinner, and says, after every second or third word, "Godem." The female portion of the British community live mainly upon tea, and never partake of that "cup that cheers, but not inebriates," mixed with cream, but with rum or brandy.

No doubt these notions are both old-fashioned and unreasonable; but, for all that, they still continue to exist to a certain degree, among certain classes, on both sides of the Channel, and it is only by increased facilities for mutual intercourse, that nations will be enabled to form correct opinions of each other. Until this most desirable change

takes place, I do not think that I am wrong in my assertion, that most men, when speaking or writing of foreign countries, do so with a certain amount of prejudice, and very often with a great deal of want of knowledge about the matter they are treating. Men like Sala, Dr. Guthrie, and others would never have written and spoken as they have done of the Dutch, Germans, and Swiss, if they had been less prejudiced, and had come into closer contact with the people, of whose manners and habits they pretended to give us a correct idea. Most Englishmen, when travelling on the Continent, have neither sufficient time or opportunity to mix with those classes which form the majority of the people, and give it its tone and character. A few families of the upper classes, grasping landlords and innkeepers, and a whole tribe of idlers, who live upon the English tourist, are almost the only people with whom he comes into contact. We need therefore not be surprised at receiving so often entirely overdrawn and incorrect descriptions of continental countries and their inhabitants.

England, on the other hand, is just as badly treated in that matter. The larger number of foreigners in England, who undertake to enlighten their friends abroad on British affairs, can lay very little claim to a thorough knowledge of the subject. The political refugee of the lower class picks up his information amongst a fraternity of his own stamp, and he sees about as much of real English life as a crossing-sweeper sees of the internal household of Her Majesty. The refugee of a higher class has better opportunities, but he seldom makes a fair use of them. The well-to-do merchant is about the best informed of the lot, but he has, as a rule, neither leisure nor inclination to use pen and ink and his brains for any other purpose but that of "collecting coins." Next on the list comes the rather numerous class of foreign teachers. Now these, taking into account the education they *ought* to have received, might fairly be con-

sidered as belonging to that curious category of human beings which the English so condescendingly call "*intelligent foreigners*." But here, again, there are difficulties in the way. Resident foreign masters have generally very few opportunities of mixing freely with the people among whom they live; and besides their leisure hours are, like "angel visits, few and far between;" so that, even though they may have the *ability*, they have not the *time*, to put their observations on paper. Visiting masters and private teachers have a better chance, but then the question is: "Le jeu vaut-il la chandelle?" Whether they know any thing about Dr. Johnson's advice, is questionable; but certain it is, that they are aware on which side their bread is buttered, and understand that, when they write, they do so, "so as they may *live* by their labours, not so as they may be knocked on the head." Now whether I have done right in following Goldsmith's advice remains to be seen. Whether or not, "I will even tell the truth and" — leave the rest to you.

Although I had heard a good deal about England's curse, "drunkenness," I was not prepared for the sights I met with on my arrival in this country. Nevertheless, I was ready to make excuses for such a state of affairs, taking all circumstances into consideration. The little town, in which I was living at the time, was full of troops, ready to be sent off to the Crimea, besides being the principal depôt for recruits from almost every country in Europe. Now garrison towns, at any time, and in any place, are no patterns of sobriety and morality; and a small town, containing some two thousand raw recruits, with four pounds bounty-money a-piece to spend, could not be expected to be a little paradise on earth. My experiences since that time have, I am sorry to say, proved to me that the greater part of England is a huge garrison town, in one sense of the word. Why should this be the case in a country, which, to

a certain degree, justly boasts to be at the head of all other nations, and how can the evil be cured? The question is undoubtedly a difficult one to answer, and the causes of this deplorable state of affairs are numerous, and very difficult to deal with. Nevertheless, I will be bold enough to point out some of the sources of the evil, and recommend some remedies for it.

Of all the evils that humanity is beset with, ignorance is about the greatest, for it is the most prolific mother of abominations on this earth; and one of her most loathsome daughters, breeding again an infinity of monstrosities, which drags the image of God down — down — far down below the level of the brute, is drunkenness. Ignorance, therefore, must be uprooted, and no means ought to be spared to attain to that end. How this might be brought about, is a subject which I intend to bring before your notice hereafter.

So much for the one great source of England's greatest curse, and now a few words about its remedies.

There are, no doubt, several of my hearers here present, who can remember the time when it was not only no disgrace among the upper ten in this country to leave a dinner-table in an utter state of intoxication, but rather a thing to boast of; and if the host could succeed in drinking his guests under his mahogany, all the more glory did he take to himself for the great feat.

Now these things do no more exist among the same class of people, and how was the change brought about? Did the state legislate for the suppression of such vile habits? Were temperance leagues got up, and Maine liquor laws proclaimed? No! They were killed by improved education and the spread of more refined feelings. If these means have proved successful among the upper classes, why not try them among the lower? If education were more generally

diffused among the working classes, their morals would undoubtedly improve; and the same feeling which now brands drunkenness as an abomination among one class, would bring about the same effect among the other.

Legislation, on the other hand, might do a good deal, without becoming arbitrary and oppressive. But what kind of legislation is required, in order to lessen, at least, if not to cure the evil? Are we to follow the lead of those so-called teetotallers, who tell us that it is utterly wrong to partake of any kind of alcoholic liquor, and who wish to suppress the traffic in wines, spirits, etc., by main force? With all due deference to their good intentions, I feel bound to say No. Let them, by all means, do their uttermost to prevent drunkenness and reclaim habitual drunkards by good example and their persuasive powers; but oppose them firmly and resolutely in all attempts to impose prohibitive laws upon the community, which would make it impossible for sensible and sober people to enjoy in reason those gifts which God has given them to gladden their hearts. Because one part of the population chooses to abuse the good things of this earth, and to lower itself below the level of the brute creation, that is no reason why the other and superior part should be entirely deprived of making proper use of those blessings.

If, therefore, the entire suppression of the liquor traffic be unjust and ineffective, we must try what can be done by other measures. Looking at matters as they stand at present, we meet, first of all, with one great incongruity, and that is the peculiar way Sunday is kept in this country. Far be it from me to depreciate the proper keeping of the Lord's day; but I most certainly cannot see any sound reason for closing everything on that day, except churches and *public-houses*. The former have, for reasons I will not attempt to explain, few or no attractions for the working-man; the latter allure him with all those snares, which only

the inventive powers of the Evil-one, and a publican, can produce. By improving the moral condition of the lower classes, and offering to them innocent recreations and amusements, such as good music, open parks, museums, and picture-galleries, we should, by degrees, succeed in rescuing them from those hells upon earth, the gin-palaces and beer-houses. By limiting, on the other hand, the hours of keeping these places open, say to one hour in the middle of the day, and two hours in the evening, we might deal drunkenness an almost deadly blow, at any rate, on Sunday.

Next in order comes the licensing system; and this, I must confess, is no easy matter to deal with, especially considering what enormous power and influence giant "Grog" possesses, and unscrupulously exercises, in this country. When we remember that the publicans are powerful enough to return members to parliament, and make them dance to their own whistle, and that day by day their number in town councils and on the magisterial bench increases, we may almost be excused for losing courage in pursuing our efforts to overthrow all nefarious privileges and monopolies.

In spite of all that, the licensing laws *must* be altered, and that soon. Whether the open or the restricted system be the right one, is not for me to say; but that both beer-houses and public-houses should be brought under the same jurisdiction, and that both should receive their licenses from the same authorities, seems to be a matter of absolute necessity. The fees for obtaining licenses ought to be greatly increased, and heavy penalties and immediate forfeiture of the license ought to be imposed for repeated misconduct, and all trafficking in licenses strictly prohibited. And, finally, all beer and public-houses ought to close at eleven o'clock on week-days and at ten on Sundays. Such is the law in many continental countries, and I see no reason why it should not be possible in Great Britain. One word

more on the subject of drunkenness and I shall have done with it. I have often heard Englishmen, when speaking of this great national evil, make use of some such expression as: "Look at the French, what an abstemious people they are; why, you never see a drunken man in Paris"! Now as to the abstemiousness of the French, and of other continental nations besides, I am not quite so sure as to the correctness of the above mentioned laudatory assertion. Certain it is that the public streets there very seldom offer any such degrading spectacles, as may be witnessed at any hour of the day or night in this country, and that especially drunken women on the Continent are as scarce as peacocks in Greenland; but, nevertheless, I should not feel myself justified in saying that Frenchmen, Germans, and Swiss could not, on certain occasions, stow away a goodly quantity of either beer or wine, only it takes a good deal of the stuff to overcome them. And, among the agricultural classes and the lower orders of working men, I am sorry to acknowledge, that vile potato-schnapps and such like poison has made sad havoc. The eulogium on Paris, and the absence of drunken people from its streets, I cannot explain more strikingly than by repeating the answer I received some time ago from a Paris car-driver, *i. e.*, "I am charmed to hear of the good opinion the English have about the sobriety of the Parisians; but then, Messieurs les Anglais never leave the boulevards and the aristocratic quartiers of the town; let them go to the older and poorer parts of Paris, and especially some of the faubourgs, and they will sing another song."

So much for drunkenness; and now for that other dark spot, which does not exist so barefacedly in any other European country, I mean the "social evil." The scenes of beastly indecency and public prostitution in broad daylight, which I witnessed in Dover, Aldershott, Shorncliffe and other places, made me often doubt whether I really was in that

England which is in the habit of calling itself, so preeminently above others, "*this Christian country*." But even here again was the same explanation at hand as before, *i. e.*, garrison and camp life, with its baneful accompaniments and consequences; an explanation, I was almost going to say excuse, which, like the first one, turned out an utter fallacy, and my sojourn in London and other large towns soon proved to me, that the only difference between prostitution in and around camps and garrison towns, and the social evil as carried on in the great emporiums of English commerce and industry, exists in the greater variety of forms and shades in which it thrusts itself upon public notice.

I have continually asked myself, How is it that, in a country which in most other respects is the best governed one in the civilised world, such a monster should be allowed to exist, so publicly, without control or hindrance? Take this town, for instance. Is there any man or woman who could or would deny that, at every step, almost at any time of the day or night, they are brought face to face with brazen-faced painted harlots, who, flaunting about in silks and velvets, infest our thoroughfares, and drag thoughtless youths into utter ruin of body and soul? Have we not all seen that dirty, ragged, bloated and besotted "Nan," who is watching, like a foul bird of prey, at every corner, for poor Jack, in order to plunder and debauch him, and then cast him off, degraded, and filled with the most horrible of all loathsome diseases, a wreck for ever after?

Ignorance of these glaring facts cannot be pleaded, and apathy is hardly conceivable. What then is the secret cause which has hitherto prevented sensible men from stepping forward, and boldly attacking this crying evil? I am afraid that a certain class of people, whom the community at large look up to, and whom they expect to take the initiative in all matters which concern the public welfare, have, with very

few exceptions, proved the greatest stumbling-block. The foolish prudery and misplaced horror of touching anything like dirt, however abominable the continuance of its existence may be, which are constantly manifested by the majority of the clergy, philanthropists, and so-called political economists, have most undoubtedly deterred good men and true philanthropists from placing themselves before the public, and proposing suitable remedies for at least abating so great a public scandal. Such men would be prepared to call a spade a spade, and would not be afraid to wade through a large amount of mud; but how can they do so, when nice clerical ears are horrified by the plain sound, and dainty philanthropical feet shrink from the splashes which might bespatter their exquisite leather covering? These specimens of pious and ultra-refined humanity are always ready to cry down that class of men, who are not only willing, but especially qualified, to understand the terrible consequences of the social evil, and grapple successfully with it. I mean the medical men, who

“ could a tale unfold,
Whose lightest word would harrow up thy soul;
Freeze thy young blood; make thy two eyes, like stars,
Start from their spheres,” etc., etc.

That man is a being whose moral and mental qualities are at least equalled, if not outweighed, by his animal propensities, is a fact which needs no further discussion. That human society is an aggregate of a multitude of these peculiarly constituted compounds, is another fact, which it would be absurdity to deny; and, such being the case, this poor mankind is to be taken as it is, and treated as such. Therefore, granting even that carnal intercourse, out of wedlock, is wrong, the fact of its existence since the world's beginning, and of its continuance as long as human beings

are what they are now, can neither be ignored nor swept away by the thunders of the clergy, or sweet-tongued philanthropy, unaided by the practical hand, which, in the absence of finer tools and better materials, can build with an axe and a saw a log house, to serve as a comfortable dwelling, and, if needs be, as a place of worship, as goodly in the sight of God as the most gorgeous cathedral.

This making the best use of the material, as we find it, is the only likely way which will lead us to an improved state of things. We have two evils before us to choose from. The one is the social evil as it exists; the other, the social evil, impossible to be extirpated, as it might be made least offensive in its practice on the one hand, and least deleterious in its consequences on the other. For that purpose, prostitution must be either, as some people erroneously call it, legalised, and put under state control, or circumscribed, by banishing prostitutes into certain well-defined parts of the town.

That the greater number of professional prostitutes is well-known to the police, is patent to all who have taken any interest in the matter. Registration, therefore, would be a perfectly easy matter, and once registered, and confined to certain houses, these women, when leaving those houses and plying their trade in the streets, could at once be taken up and fined or imprisoned. Those houses would have to be registered, as well as their inmates; and the proprietors would have to keep, at their own expense, a medical man, appointed by the public authorities, whose duty it should be to examine the women belonging to his district, at least three times a week. The police to have free access to the houses at any time of the day or night. The advantages of such a plan would be, that respectable people would be spared the nuisance of being elbowed left and right, wherever they go, by impudent harlots, whose indecent gestures and

lewd language are disgraceful to behold and sickening to hear. The temptation, on the other hand, which now thrusts itself, almost by main force, upon the young and unwary would be done away with, and men, who wish to satisfy their carnal desires, would have to go in search of places, instead of bartering in the streets for the article they are in want of. The benefit of medical examination is self-evident to every one who has the slightest knowledge of the fearful ravages which syphilitical diseases are making among young people. If those who stand aghast at the proposals I have just made could have the faintest idea of the utter and horrible misery which is bred and propagated among the original sufferers, and, what is far worse, among their unfortunate offspring, I am convinced they would turn round and say, "Do anything to stop or lessen such fearful, and, by the unborn, undeserved penalties!"

The plan of confining prostitutes to certain parts of the town has, in my opinion, only one advantage, and that is that it would be the more feasible of the two, considering the present state of feeling among certain classes, because it is a kind of compromise, between the so-called and much abhorred "legalising" of vice and the entire absence of any control. Whatever steps may be taken is immaterial, provided they tend in the right direction. My sincere hope and prayer is that some staunch and fearless men will put their shoulders to the wheel, and help to free this glorious country from one of its foulest blots.

Thus far I have only spoken of the social evil as it came before my eyes in England, and omitted all mention of its prevalence on the Continent. Well, all I can say is, that prostitution in large continental towns has as undeniable an existence as here, but it is kept under the strictest possible control, and is therefore less offensive, and its contaminating effects are brought within the narrowest circle.

Having arrived at this point, I now will for a while stop my fault-finding, and proceed to point out some of the pleasing incidents which my "foreign eyes" have beheld, and which indeed can only be met with in this land of true liberty and prosperity.

Coming to live among a nation with the impression that it only consisted of two classes, *i. e.*, the enormously wealthy and the poorest of the poor, I was not a little astounded to find out that there was yet another class, and that the most powerful of all, the middle class. Of the so-called "upper ten" few foreigners see or know anything; of the poorer classes I intend to speak hereafter; and I will therefore confine my remarks for the present to the "back-bone" of England.

One of the first things which must strike a foreigner, although brought up under affluent circumstances, is the home comforts which he meets with, even among people with comparatively small incomes. These comforts, as understood in England, are perfectly unknown on the Continent, where carpets, for instance, are only found in the houses of some of the richest people. The great convenience and thorough independence of living in separate buildings, supposing the speculative builder has not put up a mere paste-board as a partition wall, cannot find its equal any where on the Continent, where half-a-dozen and more families live on so many flats in the same house. Gas is hardly ever to be seen in an ordinary private dwelling, and the water has to be carried in pails from the street fountains, where also the washing of the family linen, and the cleansing of vegetables, kitchen utensils, etc., has to be performed, under a running fire of busy servants' tongues, discussing the merits and demerits of their masters and mistresses. Open fire-places, with their cheerful glow and healthful ventilation, find themselves represented by delf or iron stoves, producing a dull heated

atmosphere, which a draught of fresh air is seldom allowed to disturb. Baths, again, with their supply of hot and cold water, are an unknown luxury on the other side of the channel, and the tub, or the public bath, is the only available means of ablution. But that is no reason why English people should so persistently cling to that peculiar idea, which represents the foreigner as a species of human being, having an especial aversion to soap and water, and an unnatural liking for very little linen, and that little rather dirty. Decent people abroad are as fond of cleanliness as the same class in England, and dirt has its worshippers here as well as elsewhere. As to food, and the manner of cooking it, I think that the plain roast beef and mutton of old England fairly carry away the palm, and good, sound, old Barley-corn is as fine a fellow, any day, as any beverage to be had over the water.

Another distinguishing and laudable feature among the English middle classes is their fondness of spending their leisure hours at home in the midst of their families. On the Continent *pater-familias*, after the business of the day is over, goes to his café, or inn, and spends the evening in gossiping scandal and mild politics; whilst his wife has to look after her household and children, or imitates her worthy spouse by joining a sympathising circle of equally forsaken matrons, with whom to pull, over a cup of very thin tea, their good neighbours' character to pieces.

Before leaving this subject altogether, I think it but natural that I should make a few remarks about the personal characteristics which distinguish the component parts of the English middle class from the same order of society on the Continent.

Taking, as in duty bound, the ladies first, I must confess that the English "Miss," which continental prejudice had painted for my imagination, had in reality hardly any

existence. The stereotyped prude, with high cheek bones, lemon-slice nose, angular contours, and stiff back, was transformed into a stately, rather dark haired woman, with oval face and finely chiseled features, and a figure, generally somewhat above the middle height, whose exquisitely curved outlines are a delight to the artistic eye. The blue-eyed, flaxen-haired wax doll turns up to the astonished beholder a merry, roguish, beautifully complexioned healthy face, with provoking dimples in her rosy cheeks, a saucy little turn-up nose and a pair of pouting lips. And instead of the supposed beef-heel and beetle-crusher, badly shod, there peeps out from under a neat petticoat a finely cut ankle, high instep, and neatly shaped small foot, enough to drive a "Parisienne" crazy with envy. In short, not only do I consider the English style of female beauty far above that of any other nation that I have come in contact with, but it is also my strong conviction that nowhere else can so large a proportion of pretty, and even handsome, women be met with as in the British Isles; and there, again, the Lancashire witches, in my humble opinion, play by no means second fiddle. As to the character and morals of the female portion of the higher and middle classes in England, I can only say that, with the few exceptions which are to be found in this as well as in any other country, in spite of the *Saturday Review's* "Girl of the Period," Britannia may justly be proud of her fair daughters.

"John Bull," says Paulding, "was an ingenious man, an exceedingly good blacksmith, a dexterous cutler, and a notable weaver and pot-baker besides. He also brewed capital porter, ale and small beer, and was in fact a sort of jack of all trades, and good at each. In addition to these, he was a hearty fellow and excellent bottle companion, and passably honest as times go."

Such was Squire Bull, according to our American friend,

at the beginning of this century; and it is my own belief that, on the whole, he is pretty much the same at the present day. Jack of all trades he was, and still continues to be, and a mighty well-to-do fellow that sort of business has made him. Hearty and honest — aye, and not only passably honest as times go, but thoroughly honest — the ever young old man is and, with God's help, will be so as long as this globe of our's holds together. If there were nothing else in an Englishman to admire, his honesty and ineradicable love of "*fair play*" would always place him foremost among the human race. Indeed I might almost say that, just as the expression "*fair play*" is essentially English, the practice of it is exclusively an English monopoly.

If I have spoken of John Bull as he was and as he is, I hope I shall be excused if I quote another passage from the above-named author, in order to show what John Bull, thanks to the more enlightened men whom he has entrusted with the management of his affairs, has ceased to be.

Here it is. "But what tarnished all these qualities was a quarrelsome, overbearing disposition, which was always getting him into some scrape or other. The truth is, he never heard of a quarrel going on among his neighbours, but his fingers itched to be in the thickest of them; so that he hardly ever was seen without a broken head, a black eye, or a bloody nose."

Such was Squire Bull, who, by his meddling propensities, brought upon his back what a late short-lived Prime Minister and Chancellor of the Exchequer called a "*flea-bite*," but what in reality turns out a gnawing ulcer, in the shape of a national debt of some six or seven hundred millions sterling. Squire Bull, I say, has left off meddling with his neighbours' affairs, and has, like a shrewd old fellow, begun to look a little more after his own business, and, I have no doubt, a deal of good it will do him. Having

made up his mind to set his household in order, he would perhaps not be entirely disinclined to listen to a little well-meant advice, and will not get sulky or in a rage, when he is told that he is rather obstinate, and that his vanity and prejudice are apt sometimes to play the old gentleman with him. His dogged belief in the excellence of everything ancient, because it *is* ancient, and, what is more, "*English*," has kept him out of the enjoyment of many a good thing; and the two words "English and unenglish" have such a seductive sound for him, that he would be ready to commit any folly at their bidding. If Englishmen could be convinced that, every time they are told by certain designing parties to stick to a thing, and not to touch or alter it, because it is "English," or to repudiate another thing because it is "unenglish," they are being led by the nose, they would assuredly begin to fight shy of the charmers, and take the two magic words as sound warning to be prepared for the presence of rats. The bulk of the English people must learn to understand that there are a good many things "unenglish," which they would do exceedingly well to adopt or imitate, and that there are some few things "English," which it would do them no harm to throw overboard.

At this point, I now will say "Good-bye for the present" to Mr. Bull, and proceed with the inspection of the house he lives in.

In common with most foreigners, I expected to find in England a land of fog, where the sun hardly ever condescends to show his face; a delusion which reality very soon dispersed. The lovely green fields of the "Garden of England," Kent, bask as cosily in the bright sunshine as the vineyards on the Rhine, or on the banks of the Lake of Geneva. The hills and lakes of Westmoreland and Cumberland are as sweet to the eye as any scenery the Continent can offer; and the beauties of English and Welsh coast

scenery can hardly be equalled anywhere. The parks, surrounding the palace-like dwellings of the rich, cannot be matched in any other country, either for size or beauty; and the suburban retreats, with their clean-shaven green lawns, and prettily-designed flower-beds, full of Nature's most cherished darlings, belonging to the mercantile and other well-to-do classes, have no existence beyond the British Isles. But what astonished me was, that all this loveliness was jealously and mercilessly shut out from public sight by high brick or stone walls, and, at first, I attributed this walling-in practice to an almost morbid desire for privacy and seclusion. Since then, I have found out that there is another reason besides, and that a very good one, for erecting these barriers. Any one, with even the slightest knowledge of the lower orders in this country, must have been struck with indignation and disgust at their diabolical propensities for disfiguring and destroying everything that is beautiful. Where the source of this evil, as well as of many others, lies, will be a matter I intend to deal with a little later on, when I come to the question of *education*.

Concerning those vast emporiums of commerce and industry, the magnificent docks, with their numberless shipping from all parts of the globe, the enormous wealth and the gigantic magnitude of exports and imports, I need hardly say that they are unparalleled in Europe. But what must strike a stranger just as much with astonishment, and I may say admiration, is the large number of fine buildings for public and charitable purposes, erected and maintained by voluntary subscriptions and private donations. The sums of money yearly contributed for this purpose are, to the continental mind, simply fabulous; and yet the question has often arisen within me, "Does this vast expenditure produce satisfactory results?" I am afraid my answer must be in the negative. A great deal of money and power must

necessarily be wasted, where the managing power is divided, and the administrative bodies are multiplied and scattered about. Institutions, too, spring up, and struggle to afford, single-handed, that relief which combination with others only could adequately grant; and the multiplicity of charities very often defeats its own end by wasting its substance upon recipients who are already taken care of by other people; and numbers of those who ought to, and otherwise could, be helped are left, like the ass between two bundles of hay, starving. That there is something utterly and radically wrong about the relieving of the poor, must be evident to even the most casual observer. On the one hand, we have not only that inexhaustible, overflowing source of private charity, which is unrivalled on earth, but the equally unrivalled fountain which is fed by never-ceasing, grinding-down, exorbitant poor-rates, that very nearly turn the patient ratepayer into a pauper, in order to maintain his brethren, who by another road have already reached the same miserable goal; on the other hand, utter, abject, wretched poverty and misery stare us in the face, wherever we go; ragged, foul-tongued, vicious human creatures, of all ages and sexes, fill our streets, and workhouses are growing into pauper towns within the towns that maintain them. The millions, which are collected and spent, will continue to be swallowed up by the yawning gulf, and poverty will, like an ill weed, grow apace, unless other steps be taken, and that speedily, to ensure such results as might reasonably be expected from the magnitude of the stake thrown into the venture. Labour, too, and money, which are constantly thrown into distant lands for the conversion of heathens, might more profitably be spent at home among the ten times worse than heathens who disfigure with their pestilent presence the fair face of this lovely country.

Turning my eyes in other directions, I find that the field

I have to travel over is so large, and the subjects which require notice are so numerous, that I feel almost bewildered, and quite unequal to do justice to the task I have undertaken, in the short space of time I have still before me. The political institutions of England, for instance, would furnish subject matter sufficient to fill volumes, and I will therefore confine myself to a few remarks only, about the administration of justice in these realms.

Foremost of all stands out the English mode of trial by jury. This is pre-eminently of English origin and growth, and its foreign imitations are decidedly of inferior quality. The principle of considering the accused innocent until the contrary be proved, and the impartial manner in which an English judge carries on the proceedings, and lays the leading points before the jury in his summing up, are a striking and favourable contrast to a continental judge-president, who at the same time fulfils the duties of a bullying counsel for the prosecution, and a judge with a foregone conclusion against the prisoner. In England, the prosecution has to prove the guilt of the prisoner, who is surrounded by all possible protection; on the Continent, the prisoner has to prove his innocence, amidst a pelting cross-fire of a badgering public prosecutor and the peremptory questioning of the judge on the bench. One especial feature, which I may mention here, peculiar to the trial by jury in France, and in some parts of Switzerland, has often puzzled English newspaper readers, and given rise to a deal of indignant exclamations and absurd ideas concerning the state of moral feeling of juries, who, after some particularly horrible crime, return a verdict of guilty, with the appendix, "under extenuating circumstances." Strange to say, there are still newspaper editors and correspondents, who ought to know better, who will persist in holding up these jurymen and their supposed moral perversity to the obloquy of a virtuous

British public. The fact of the matter is, that the expression "extenuating circumstances" is nothing but a legal form, created for the purpose of ensuring, on the one hand, the conviction of a guilty prisoner, who might otherwise escape, when the verdict of guilty enforces capital punishment, and, on the other hand, of enabling jurymen, who object to that form of punishment, to give a verdict according to their principles. "Guilty," *pur et simple*, means death; with extenuating circumstances, penal servitude for life. So much for the advantages of the English procedure, and now a few words about its disadvantages.

Granting the principle of considering the prisoner to be innocent as being a correct one, are we therefore justified in protecting him to such a degree, that the prosecution should meet with such obstacles, that conviction should become a matter of the greatest difficulty. Is it, moreover, a proper thing to compel a man, who has been robbed and outraged within an inch of his life, to go to the expense of employing a lawyer, if he wishes to bring the ruffian, who has half murdered him, to justice and condign punishment? Where is the majesty of the law, and what good is the protection the Crown professes to extend over its subjects, when they cannot or will not provide the unfortunate sufferer with the means for obtaining justice and punishing the criminal? To show how unjust and mischievous this system is, I can hardly give a better proof than by relating a fact, which happened a few months ago in one of the Midland counties.

A poor pedlar, who had been selling his wares at a fair, was counting the proceeds of his day's traffic, when he was knocked down and robbed of everything he had upon him. The ruffian, who had committed the outrage, was soon after captured and identified before the magistrates by both the pedlar and his daughter. Doubt as to the man's guilt there was none, but the magistrates, not having sufficient power to

award heavy punishment, sent the case for trial, and bound over the poor pedlar and his daughter, in twenty pounds each, to prosecute. Soon after the man found a paper at home, but, not being able to read, he took no further notice of it and went away on one of his hawking tours. On his return home, he and his daughter were arrested and sent to prison, because they had unwittingly failed to appear in court to prosecute the criminal, who, for want of the presence of the ignorant prosecutor, was set at liberty. In prison they were to be kept until they could pay their forty pounds, which, it is needless to say, they could never have done by themselves; and had it not been for the public press, which took the matter up, the unlucky creatures might have been left to this day within four prison walls, to cogitate over and admire the benevolent law, which so kindly protected them and provided them gratis with board and lodging.

This single instance speaks volumes, and ought to be sufficient to prove the absolute necessity of providing a public prosecutor, through whom the honest majority of the people might claim justice, without further loss of time, convenience, or money.

Another peculiarly English institution, the utility of which I could never perceive, however hard I tried, is, what some people call the "*Lay Magistracy*," and others, less reverentially, the "*Great Unpaid*." Who are the distinguished members that compose this august body, and what are the qualifications required for the proper execution of their duties? The former, I fancy, are mostly country gentlemen, fond of field sports and game preserving, with a sprinkling now and then of some orthodox clergymen, with fat livings and little to do; and, according to place and circumstances, rich merchants and manufacturers, accompanied, not unfrequently, by a beer-barrel or two, will find their way to this apparently much coveted seat of honour. As to the

latter, *i. e.*, the qualifications, I am not quite sure whether the aspirant's political creed and the services he has rendered to his party are not heavier weights in the scales, than sound knowledge of the law, a thorough education and general experience of the world and its doings. How far these wise men can be trusted with the administration of justice is evident from the fact, that every lay bench is fortified by that useful instrument, the law-clerk, who, in my humble opinion, would prove just as useful without the help of the magnates through whose mouth he speaks. That a great many of these lay magistrates are most worthy men, with a deal of shrewd common sense, I will not for one single moment deny; but, for all that, it is quite impossible that men, without a proper training for the purpose, should fulfil their important duties, either to their own satisfaction, or to that of the community at large. I have often wondered how some of these gentlemen must feel, after having given their judgment in a matter like the congregating of disreputable characters in public places of amusement and refreshment, when the following day another batch of their brethren give an entirely opposite decision; or when one set of them grant public-house licenses after their own fashion, and another refuse them according to their notions as to the state of the law. How much such proceedings may add to, or detract from, the dignity of the law, is a matter which I will leave to others to decide; but this much I will say, that it is highly probable that stipendiary magistrates in boroughs, and circuit stipendiary magistrates in counties, would prove a less cumbersome and more efficacious contrivance, than the present "great unpaid" machinery.

Passing over a variety of topics, which I would fain discuss, had I but time and space, I will now wind up my already too lengthy paper with a few observations about a

subject, which to me for years has been, and will continue to be, a matter of the deepest concern, I mean *Education*.

When last I had the pleasure of addressing you, I tried to prove the shortcomings of the present system (if system it can be called) of primary education in England, and the necessity of introducing a law, which should make national education a matter of compulsion. The views I then gave expression to I still hold, and, if possible, more persistently. Whenever I go into town, and see the endless number of so-called street-arabs, who tumble about my legs and tear my ears to pieces with their strident cries of Fusees, Sir, two-a-penny, *Mercury*, or *Post*, *Porcupine*, and *Daily Telegraph*; or, what is worse still, begging and prowling about, and picking up stray odds and ends, or stealing whatever is nearest at hand, wherewith to supply their brutal parents' beastly lust and intemperate cravings, I cannot help thinking that such a terrible nuisance ought to be put down by main force, and that these wretched children ought to be driven out of the streets, and their noisome progenitors compelled to send them to school. Such measures only will help England to get rid of that dark plague-spot, which tarnishes her proud claim of being a Christian country. About this part of the question I will say nothing more at present, but will at once proceed with the other part, which is of as much importance as the first, if not even more.

In a country like England, where class-prejudice runs so high, and class distinction is so marked, it is not to be wondered at, that these peculiarities should assert themselves even in educational matters. The consequence is, that it would be very difficult to establish in England a national system of education, as carried on in most continental countries. Yet even a compulsory law, which requires that every child must be educated, and gives liberty to teach to every

one that is properly qualified, need not interfere with existing class-distinctions, and would not be prejudicial to the interests of private educational establishments. The middle-classes therefore could still enjoy the blessings which may be derived from private boarding-schools. What these blessings are, in my opinion at least, I will endeavour to point out to you.

Parents, who prefer not being bothered every evening by their children, send them to a boarding-school, where they have the advantage, besides many other good things, of not being brought into contact with the darlings of less genteel papas and mammas; and where, they are assured, they will find all the comforts of a Christian home; in fact, will be treated as members of one loving family. As to acquirements—well—one might imagine oneself in a perfect fair of sciences and arts—anything for your money. Such are the great expectations and fine promises. Now for the reverse of the glittering medal. What are the inquiries which fond parents generally make, before sending their youngsters to the wonderful establishment? and what are the guarantees which the mighty pedagogue can offer for the proper execution of his marvellous promises? A grandiloquent prospectus and the recommendation of some genteel acquaintance very often represent the former, and the latter, I am afraid, not unfrequently are near relations of Brummagem.

Of course this does not apply to all boarding-schools. I am perfectly aware, I am happy to say, that there are a good many private establishments, which can stand forth proudly and say, "We have done our duty conscientiously, with thoroughly satisfactory results." Nevertheless the system is open to great objections, and cannot but prove injurious. First of all, what proofs have the parents of the pedagogical fitness of the proprietor of the school? He may be a

graduate of some university or other — very well. But he may also be anybody else — goodness knows what or who — what then? This latter supposition, I am sorry to say, proves only too often true; and how could it be otherwise, when any man or woman, however ignorant and unfit for the undertaking, may keep a school? Indeed “keeping a school” seems to be considered, by some people, as a kind of easy way of making a genteel living. The ways and means which these trainers of youth have to resort to, in order to fill their schools with pupils and keep the concern a-going, are simply degrading to a profession, which, under a better system, might have a perfect right to claim a position in society on a level with any other liberal profession. If teachers, as a class, are not treated and respected in England as they are elsewhere, it is because these interlopers have accustomed the British public to witness any amount of cringing and toad-eating; so much so, that the educated, conscientious school-master is hampered in his progress, and has to submit to annoyances, and even indignities, because his pupils’ parents are not able to distinguish paste from real jewels. Must it not be galling to an educated gentleman to be bargained and bartered with, as if he were a pedlar; to receive precise instructions as to the manner of treatment and teaching of his precious charges; to be interfered with at any moment by a fond mamma, who is indignant at some imaginary slight or punishment that her darling has received; to see pupils come to school and leave it whenever it pleases them, and to do their work on the same principle! Yet such, and a great many more, are the miseries every private school-master, if he be not thoroughly independent, has constantly to submit to. Besides, this is not all. Look at the pains-taking real teacher; could he afford or think it right to be living at his ease, whilst under-paid, hard-worked assistants have to toil away to fill their idle and scheming employer’s

pockets, and earn for themselves a livelihood which many a working man would scorn to accept? No, he has to work from early morning until late at night, and for his assistants he chooses men whom a housemaid's wages would not induce to help him in sharing the arduous task he has undertaken, of teaching youths useful and sound knowledge, of preparing them for the battle of life before them, and instilling into them those moral feelings which alone can entitle them to the appellation of "gentleman."

Speaking of underpaid assistant-masters leads me to another feature, which is not peculiar to some kinds of boarding-schools only. Many of the so-called "Public schools" have a tendency in the same direction, and this is especially the case with foreign masters. Whether some of these foreign professors can really be called "underpaid," or whether they are not dear at any price, is a question which the mentioning of some facts and circumstances, that have come to my knowledge, and which I can vouch for, will answer in such a manner, that doubt will simply be impossible.

For example, there was, until lately, a foreigner employed at one of our leading institutions in this town as teacher of the German language. Now this man repeatedly confessed that all the German he knew was contained in "Ahn's first course," and that he always prepared just sufficient to last for an hour's lesson. "But," he was told, "suppose some inquisitive boy asks you the meaning of this or that word in German, what answer can you give him?" "Oh, nothing easier," says the professor; "I tell them, boys are to answer when they are asked, and not to ask questions themselves." How far this man was a fit and proper person to be trusted with any educational duties is patent from the fact that he acknowledged that he was utterly unable to make head or tail of the German "mir and mich, ihm and ihn," etc. To

say that this distinguished foreigner simply proved by this admission, that he did not know the difference between a Dative and an Accusative, is sufficient to show his qualification for assuming the title of a teacher. If such cases can happen in our leading institutions (and this is by no means the only one), what are we to expect from minor establishments, where the principals have smaller means and fewer opportunities to protect themselves against imposition? If we look at some of the principals of schools, and the manner in which they procure the services of their foreign assistants, we need not be surprised at the large number of impostors, who find their way into situations for which they are just as fit as is a sow's ear for making a silk purse. But where lies the root of this evil? Simply in this. If the principal of a school is in want of a foreign master, he applies by letter to one or other of the scholastic agencies, which abound in London and elsewhere, and within a week his desk will be covered with heaps of applications from candidates, who profess to teach everything known and unknown under the sun. What to do — and how to choose? Ask for references, to be sure; that will settle the question. Excellent references arrive, and, after much thought and trouble, the most suitable aspirant — on paper — is selected and engaged. But, lo and behold! after a short time the Phoenix does not stand fire, and turns out a waiter out of employment, or a disappointed commercial traveller; in short, anything but what was expected of him. And what about the references? Sham, mere sham! References are manufactured to suit any requirements, and the scholastic agencies have not, nor do they profess to give, the slightest guarantee about the *bona fide* character of their subscribers. "But what is to be done," I may be asked, "to evade such swindling?"

My answer is, "See the candidates personally; and if you are not able to judge for yourself, refer to a foreigner of

recognised standing; or, what is better still, apply to continental training-schools, or colleges, and you may be sure to obtain the material you are in want of, provided you offer adequate remuneration for the services expected and rendered."

These remarks in themselves ought to be sufficient to prove that middle-class education in England requires looking after. If other proofs were required, the report of the Education Commissioners, which appeared in the last parliamentary blue book, would amply sustain and corroborate my assertions, and I consider it therefore superfluous to enter into further details to establish the correctness of my views. What effect this kind of half-education has, especially upon young men in large commercial towns, is evident from the manner in which the greater part of them spend their time after office-hours. The "Royal Pandemonium Palace, Foreigneering Square, London," and its frequenters, as described in *All the Year Round*, gives us a very fair idea how swells of all grades and ages improve their moral and intellectual capacities, and what food their so carefully trained minds crave for. To lay the blame upon the shoulders of these foolish youngsters altogether would be both unwise and unjust; the fault lies just as much at the door of self-appointed teachers and foolish parents; for

"'T is education forms the common mind;
Just as the twig is bent, the tree 's inclined."

And now, before I come to a conclusion, allow me to pay my humble tribute of admiration to England's poets and English literature. Great in most things, which constitute the material welfare of a nation, England is still greater in the splendid array of her mighty sons, whose genius has placed them in the foremost ranks of the world's greatest authors. Had England produced but one poet, the

“Swan of Avon,” she might have stepped forth to proclaim to all mankind, “Behold the only one that ever was, or ever will be !”

“Each change of many-colour'd life he drew,
Exhausted worlds, and then imagined new ;
Existence saw him spurn her bounded reign,
And panting Time toil'd after him in vain.”

But, just as in the firmament the most glorious stars are surrounded by their minor, yet lovely, brethren, so the divine poet was accompanied by those shining lights which time has not yet dimmed or extinguished ; and his train has been swelled by incessant additions of luminaries, second to none of their brilliant rivals in the universe. And, if I devote my concluding sentences to the purpose of pointing out one member of this brilliant body, I hope I shall not be accused of partiality, but that all of you will join me in my heartfelt expressions of admiration of the “King of Novelists,” the author whose characters and sayings have become “household words” to every one of us ; I need hardly say I mean Charles Dickens.

Begging you will believe me that, in what I have brought before you,

“I did nothing extenuate
Nor set down aught in malice,”

I can heartily say,

“England ! with all thy faults, I love thee still ;
. . . and, while yet a nook is left,
Where English minds and manners may be found,
Shall be constrained to love thee.”

ELEVENTH ORDINARY MEETING.

ROYAL INSTITUTION, 22nd March, 1869.

REV. C. D. GINSBURG, LL. D., PRESIDENT, in the
Chair.

Mr. George Mackenzie, Cebu, Philippine Islands, was unanimously elected an Honorary Member.

Captain Robert Morgan, ship "Robin Hood," was unanimously elected an Associate.

Mr. Thomas Higgin was unanimously elected an Ordinary Member.

Mr. T. Scaife exhibited and explained an instrument invented by him, and called a *Photophon*, for the photography of sound.

Mr. T. J. Moore exhibited specimens of Wallace's Bird of Paradise, photographs of the cervical vertebræ of the Indian elephant, and a large crab from the Pedro Quays, Jamaica.

Mr. Chadburn exhibited a new self-registering aneroid barometer.

The Honorary Secretary then read the following Address, proposed to be presented to Mr. Charles Dickens, which was approved of and adopted, on the motion of Dr. Cameron, seconded by Mr. A. Higginson : —

"LITERARY AND PHILOSOPHICAL SOCIETY OF
LIVERPOOL.

"To Charles Dickens.

"Dear Sir,

"The Members of the Literary and Philosophical Society of Liverpool, feel that they cannot permit the occasion of your

present visit to the town to pass by, without expressing to you personally the very great admiration they entertain for your Literary genius, and their high sense of the great benefits your Works have conferred upon the community; by their tendency to raise the tone of public sentiment; under the influence of which, many social abuses have been corrected, many laws have been improved, Education has been extended, and the various classes of society have been brought into closer sympathy and relationship.

"They trust that you may live to see still larger results of your Literary labours, and they hope that you will add one more to the numerous bonds by which you have attached yourself to your fellow-countrymen, by permitting them to enrol your name as an Honorary Member of their Society.

"On behalf of the Members,

"We are, dear Sir,

"Yours sincerely,

"CHRISTIAN D. GINSBURG, LL.D., *President.*

"J. BIRKBECK NEVINS, M.D.L.,

"HENRY H. HIGGINS, M.A.,

"J. A. PICTON, F.S.A.,

} *Vice-Presidents.*

"ALBERT J. MOTT, *Treasurer.*

"JAMES BIRCHALL, *Honorary Secretary.*

"ALFRED HIGGINSON, M.A.C.S.,

"EDWARD DAVIES, F.C.S.,

"CH. FLUECK,

"THOS. J. MOORE,

"WALTER L. CLAY, M.A.,

"J. S. JONES,

"GEORGE H. MORTON, F.G.S.,

"ALFRED E. FLETCHER,

} *Members of the
Council.*

"*Liverpool, April 7th, 1869.*"

The following paper was then read :

SEMITIC PROVERBS.

By BARON LOUIS BENAS.

RACES like individuals, evince peculiar aptitude for certain callings; whilst the one shows desire for Music the other does so for Mechanics, and it is futile on our part to ignore the fact, that he who follows out the bent of his mind shows greater skill in the profession of his choice, than in one he is forced to adopt unwillingly.

Thus we have had literary, artistic, warlike and colonising nations, and we find at the present day strong evidences of this fact. France, with all her acknowledged fitness for military organisation, with all her *bonhommie* and sociality, has yet been unable to found a permanent colony; whereas England, or rather the Anglo-Saxon race, shows a wonderful vitality, even when separated from the parent stem. There are in that race all the qualities necessary to form an independent Commonwealth; the love of order, the respect for the law, the aptitude for making laws, all these combined solve the problem of the foreigner as to how so many Englands are being scattered everywhere, prototypes of the great mother, and together forming, as a modern writer so aptly expresses it, a "Greater Britain." What a contrast to Algeria, where the French hold only so much territory as is under cover of their guns.

Whilst Britain is destined to be the Mother of Nations, France seems fated to be but the cultivator of those lighter pleasures that ornament, but do not tend to create. Each people and every nation has, without doubt, to fulfil

its mission in history. Without the gift of prophecy, we may not be able to map out this future free from error. Yet we may not be far from truth when we imagine, that the world will know England best for its commercial pursuits, France for its volatile genius, Germany for its thought, philology and metaphysics, Italy for its music and plastic art; and though each and every clime may have produced an individual genius towering above his fellows, the nations in the future will be judged not by individuals, but by the peculiarities of the bulk of their populations. Mere wealth and architectural splendour will leave futurity nothing much to feel proud of, with Horace —

“Jam pauca aratro jugera regiæ
Moles relinquent ———.”

Britain will add to her laurels of futurity by her immortal literature; and whilst she might have shared the fate of Phœnicia without it, her pursuit of literature ensures her vitality.

Of all the nations of antiquity, only those live green in the memory of the world that have cultivated letters. We have little of Egypt left, save her pyramids, monuments and mummies, and the records of non-Egyptian authors. Of her own version of her government and origin we know little but that which has of late been deciphered from her Hieroglyphics, and at best our knowledge of this most ancient race is very vague. Of the Aryan and Hindoo races proper, though equally ancient, if not older, we know a little more, from Sanscrit literature, whose influence, however, upon modern ideas is limited. What have Assyria and Babylonia left us, save their disentombed monuments? Phœnicia, Carthage and Tyre are almost blanks in the world's history, and what we know of them is derived from other sources than their own.

It was left for two small races only to be the teachers of

mankind ; to leave posterity a legacy of literature indicating to us the inmost workings of their minds, and recording what they knew of their origin, their vicissitudes, their opinions ; and so to influence neighbouring and distant peoples, as to cause their writings not only to be loved and cherished by their descendants, but to be admired and imitated by others. Of two small families only has it been the privilege to act as patterns for rising generations, their heroes having been held up to the wonder, and their writings having formed the basis of the letters, of modern Europe. These two races have striven for the mastery of the world's mind. The one the "Semitic Race," represented by the Jews ; the other the "Hellenic," represented by "Greece" and developed by "Rome."

Comparing these two races, there will be found a wonderful similarity and a wonderful contrast, a similarity of genius, a contrast in vitality. The Hebrew, living in a land flowing with milk and honey, upon the produce of a bounteous soil, mentally fed by the rugged and picturesque scenery around him, taught to love and cherish the tales that were handed down to him ; when he stepped beyond the limits of his territory, he everywhere compared favourably his own laws and domestic life with those of his neighbour ; and inured from his early youth to virtue and self denial, he found his rewards in the very restrictions which his neighbours despised, and when they called him unsocial and selfish, he retorted by calling the outer world barbarian. Thus this very peculiar people were always half courted, half envied, but always hated by their neighbours, whilst the other races were strong in muscle, gigantic in stature, and fond of sensual pleasures, these were strong in mind, obstinate in purpose, and full of mental activity. Whilst the one was the "noble animal," the other was the "noble man."

But as physical force triumphs over physical weakness, so

the Hebrew race had to succumb personally, but rested content with the hope that their genius would conquer the minds of their opponents, and thus renew the combat in that domain, where they were more than equally matched with their adversaries.

Before proceeding further, we must examine the characteristics of the Hellenic race, inhabiting

“The isles of Greece, the isles of Greece,
Where burning Sappho loved and sung,
Where grew the art of war and peace,
Where Delos rose and Phœbus sprung.”

They had their Acropolis, like the others their Temple; they also called the outer world barbarian, were chary of receiving innovations, and, like the other race, put to death their most distinguished philosophers for indulging in speculations distasteful to the masses; they warred among themselves, as did the others; and wrote poetry, which, like the others, has lived through the wreck of ages and exists still. Even their traditions, like the others, tell of many tribes waging war with the one, the origin of which was human frailty. (Judges xix. and xx.) But it was the peculiar feature of the Semitic race to write and to propound ethics, that were acceptable to the vilest slave as well as to the most cultivated patrician; it was, moreover, in their power to touch the tenderest chords of human sympathy, and above all “to live on” with their works.

We must in some degree place ourselves in the position of the ancients, for illustration, that we may the more readily conceive how very difficult it was for them to obtain learning at all, before we attack their mode of thought. In primitive times it was an absolute necessity that learning should be conveyed in a brief, trite and concise manner. In our days, if we want information, be it in Mathematics,

Philosophy, or Belles lettres, at the nearest bookstall, for a few shillings, we obtain the needed volume. Therein is contained the author's learning, labour, skill and industry; it represents his anxious ponderings, his hopes, his fears, his long years of study; and yet this is all ours for a few counters. Again, that great handmaid to knowledge, the printing press, multiplies this, seed-like, a thousand fold; so that we moderns need only have the desire to learn, and without difficulty, with little inconvenience, and with only a pleasurable amount of toil, we can dive into the recesses of wisdom, and lave to our heart's content in a sea of knowledge. How different with the primitive ancients; they lived in isolated districts, tending their flocks and herds. No paper, no printing, no journals, no instructive biographies, no cheap bibles, no entertaining novels, nor any tracts, asking, as they do, in significantly printed headings, "Where are we all going to"? Knowledge must have been with them the result of actual experience, and of a facile and retentive memory, capable of receiving the impress of tradition.

An old man would gather around him the eager youth, and would expound to them what he knew of the phases of nature, would recite to them the heroic deeds of one ancestor, and dilate upon the peaceful virtues of another. There was, we should imagine, a mutual sympathy between the teacher and the taught; his words would become stereotyped in their memories, and, when confirmed by actual results, would instantly be brought back vividly to the mind, as "these were the foregone conclusions of my teacher." The phrases became the watchwords for the growing youth; now warning, now stimulating, now cheering; and the identical words, agreeably and briefly couched, were in after time lisped by the infant, uttered by the rising youth, and confirmed by the man, thus handed down to us as a "legacy from the past to the present," in the shape of household words and proverbs.

The Hebrew-Semitic and the Hellenic races for a long time pursued their sphere of activity unknown to each other; their orbits touched not one another. The former had to combat with the remains of Egyptianism, with foes within and without, but invariably, in their mental capacity, triumphed over their neighbours. After a very long period, when the visible interposition of favour for this race had ceased, and merely the memory and traditions of it kept the spirit of knowledge and truth living in their midst, these two races came into actual collision.

When the great Alexander with his phalanx pierced the heart of Asia, he came, it is said, within sight of the capital of Palestine, and went away again; whether this be fact or not, true it is Alexander did not interfere with the inhabitants of Palestine. Upon the death of this youthful conqueror, the kingdoms, subdivided and ruled by his generals, imported everywhere a little Greece. Hellenism was rampant on every side, and Jerusalem, among the rest of cities, was not free from it. The better and wealthier "Jews of the period" thought it quite the *ton* to imitate the customs, the manners, and the language of their polished neighbours. The grand and musical language of their fathers was discarded for the more polite and sonorous Greek. Temples of Venus, and the mad Saturnalia of the beautiful strangers, were preferred to the simple and more spiritual worship of their ancestors; the lyre of the Shepherd King was to be thrown aside for the harp of the blind bard; in fact, "the crisis had arrived," Greek met Semite, the former in the shape of Antiochus Epiphanes, the latter in Judas Maccabeus; the one or the other must have prevailed for ever. But what was in the eyes of the Greek a barbarous, untaught, untrained youth, rose up like an avalanche, and, true to the tales of their bards and seers, drove back for all time the overwhelming tide of Hellenism. The victory was of so much

greater importance to the world, as the object of the Syro-Greek was less the personal conquest, than the mental subjugation of Semiticism; it was less even a human struggle, it was a combat between "Mount Olympus" and "Mount Zion."

Rome was the propagator and successor of Hellenism, but, unlike Greece, was tolerant to every custom and tradition, except to that of the Hebrew-Semitic race. "*Credat Judæus Apella*" was about the summing-up of the majority of the Latins. The inhabitants of imperial Rome would pay respect to a new Osiris or Isis; any plastic deity, or a new beautiful form was always welcomed to the national Valhalla; but this race, hailing from remote lands beyond the seas, to claim superiority in mind and tradition to the city of Romulus, was out of the question; they could not understand persons meeting in four walls and being edified; it was ridiculous. When, after a long and severe struggle, the chosen city had fallen, a shout of joy rang through the classic lands, "*Hierosolyma est perdita*," and echoed and re-echoed from city to city, as if indeed Jove had triumphed. The very conquest of the Jews tended to level the Olympian heights everywhere; knots of this race had penetrated and settled in the Roman empire, and carried with them their Asian tales and ethics, gaining many hearers; and when a small band of Hebrews, obedient to their teacher's call, proclaimed in every land those precepts that lived for ages among their ancestors, Rome and Hellas tottered, reeled, and at last submitted captive to those old Semitic tales that erst she despised.

But a burning, lingering hatred to the Semitic race took place after this; the humiliation was so deep, so lasting, that there must needs be some revenge for this. For fifteen centuries everything was taught in the Greek and Latin

languages; every avenue that could lead to studying Oriental tongues was sealed; every trace of Hebrew literature was shut out and garbled, translated and seen under the green spectacles of prejudice; so that it was made to appear as though everything good was the offspring of other races, but that from which the world imported its faith and morals.

Womanly equality and virtue especially, were attributed to Germanic influence, the sublime and beautiful to Hellenic inspirations, and jurisprudence to Rome and Byzantium.

The Semite looked on and smiled; he had been taught patience in the school of adversity; he knew well that, as the earth turns upon its axis and sees again the sun, so would the sun smile upon him again. Reviled, insulted, tortured, persecuted, and hated with fiendish hate, he studied on, and sang on (for music and study are the Hebrew-Semite's chief pleasure); besides, he knew himself triumphant even under contumely; he saw every palace, every hut, every town, every village, nay, every lonely ship that sailed upon the broad ocean, re-echo those sayings, and read for consolation the vicissitudes of those Semitic peasants, for whom he fought so long and so well, to hand down to posterity.

But the chains forged by men to keep their fellow men in mental bondage were burst, and this also not a little owing to the genius of the Semitic race. The mind was declared free, and the fountain of learning was opened unstintingly to the thirsting for knowledge. Within the last two hundred years, there has been a gradual and increasing struggle for information; the hitherto sealed books of Oriental lore have been opened to us, and the majority of savans, of every race and denomination (to their credit be it said), fearlessly expound the result of their learning, not caring whether it clashes with this or the other preconceived notion; and when

they find a fact that has hitherto been withheld, they say with Cicero —

“Non est meum contra auctoritatem,
Senatus dicere.”

The Hebrew literature, commencing in the dawn of the world's existence, bloomed and flourished in those periods usually termed (whether with justice or no it is for history to decide) the “dark ages,” and exists still, vigorously, and with ever fresh and youthful charms.

The first series of Proverbs, originating in so distant a period that they are lost in the mist of time, I intend to lay before you, are in deference to “*place aux dames*,” relating to the gentler sex. I exclude of course all those that are to be found in that part of Semitic literature called sacred.

“A good wife is a good present.”

“Happy the man that has a pretty wife; his days are increased.”

“Descend a step to choose a wife; ascend a step to choose a friend.”

“If your wife is little, stoop to her.”

“A woman can love a poor lad better than a rich dotard.”

“A man's first marriage dissolved, his feast is over.”

“A man can only find real delight in one wife.”

“When the wife is asleep, the basket sleeps as well.”

“A wife speaks and spins.”

“That woman is faithless for apples, and divides them among the poor.”

“A man should not, whilst drinking from one cup, look into the other.”

“The virtuous are honoured, though they be poor; as a lion is feared, even when he sleeps. Vice, though it be rich, is despicable, as the dog wearing a golden collar.”

I have only quoted a few of the many proverbs on this subject that lie scattered everywhere in the Hebrew literature; and it is perfectly evident, that woman occupied as high and respectable a position as she does at the present day. It has

been the fault of many writers to select the worst possible garbled and detached extracts, misquoted and mistranslated, and deduce from them that woman owes her true and equal rank only to Northern races. This reminds me of the story related by a Persian poet, of a man sent to explore a wonderful city, who, on arriving there, picked some refuse from the streets, and, returning, showed this to his people, saying, "This is what I found in the city;" everything else he omitted from his tale.

Suppose one, who does not desire to know the noble virtues of our men and women of England, were to say, on returning to his distant land, "In England, if a woman has the misfortune to have a drunken and dissipated husband, he can sell her house and its contents; and, though she may have brought him thousands, she has no right over one single penny; the act of marriage makes the man her entire master." He might say further, "that when a man goes astray, his faults are winked at; but when a poor, weak, frail woman has succumbed to temptation, not only is she shut out from all society, but the only claim the law allows her and her offspring, from even the wealthiest wrong-doer, is a pittance not sufficient to keep body and soul together; to a rich man, scarcely worthy the name of a fine; whilst all the anguish, remorse, and bitter disappointment falls upon the weaker creature, the other escapes almost entirely. Nay more, if in better classes the gentlemen dine in public, the ladies are put up in the gallery, to see the animals feed. If a woman in England wishes to preach, she is called a strong-minded masculine creature; if she is proficient in medicine, and desires to practise, she is hooted at by medical students of the male gender; in literature, if she wishes to imitate her lord and master, she must be content with the nickname, Blue-stockings. It is in England only a misdemeanor to lure a girl away from her home; whilst wounding a sheep, goat, pig, or bullock is felony. Referring

to history, he might see that Charles II., Louis XIV., Louis XV., and a host of others, imitated King Solomon in everything except his wisdom ; and that, notwithstanding, there were plenty of pulpit orators, who would descant upon the monarch's virtues. He might perhaps add also, that some in private life were not loth to imitate their bad example. His jaundiced look could not notice our men and women of England, the majority of whom are patterns of manly and womanly virtue ; he would not observe those charming English homes, which peace and virtue seemed to have marked out for their own. Such a prejudiced stranger would forget to recount how many hospitals and asylums there are, to relieve every form of human affliction, with which England is dotted ; and then too mainly supported by the spontaneous charity of our countrymen. Such a man would only have an eye to the social diseases to which every civilised community is liable ; wallowing in the mire and charnel house, but shutting his eyes to the robust, blooming, healthful vigour of our national life. This has been the prevailing fault of former writers on Semiticism and its literature.

Bishop Lowth, in his fifth lecture on Hebrew poetry. states not only that the antiquity of the writings forms a principal obstruction in many respects, but the manner of living, of speaking, of thinking, which prevailed in those times, will be found altogether different from our customs and habits. There is therefore great danger, lest, viewing them from an improper situation, and rashly estimating all things by our own standard, we form an erroneous judgment. Of this kind of mistake we are to be always aware, and these inconveniences are to be counteracted with all possible diligence. Nor is it enough to be acquainted with the language of this people, their manners, discipline, rites, and ceremonies ; we must even investigate their inmost sentiments,

the manner and connection of their thoughts,—in one word, we must see all things with their eyes, estimate all things by their opinions; we must endeavour as much as possible to read Hebrew as the Hebrews would have read it. Thus far the Bishop.

But our countrymen and fair countrywomen will find eventually, to their surprise as well as pleasure, that the first race that gave woman her true and proper sphere in the world's status was the Hebrew-Semitic race. No matter what the jaundiced opponents say of Polygamy, this was the rare exception and not the rule; indeed it would have been impossible in Palestine to have carried on Polygamy to a great extent, inasmuch as in every population the proportion of males and females are nearly equal; it is well known the Jew rarely intermarries with a Gentile. Thus, were the Jews not Monogamists a great part of the men would have been forced bachelors, which we know from history was not the case. And if the wealthy gave license to their passions, their women were not trulls as they are at the present day, but honest creatures before man and their Maker. Dr. Jellineck, of Vienna, in a recent volume,—I must confess I quote second-hand, as I have only read extracts from the work in a French publication,—says, “the Hebrews thought it a matter of course that women might expound the law, that they might judge, and that they should carry on important commercial transactions; and, to this day, Hebrew women, in Hungary, Poland, and some parts of Germany, marry a man of literary pursuits, and become in these instances the bread-winners; and whilst they faithfully perform their domestic duties, they are not unmindful of their mental recreation. I will make use of one extract from Lady Morgan's volume, *Woman and her Master*. “Wherever the women of the Hebrews (the daughters of Sarah and Rebecca, who built up the house of Israel) are found,—and

where are they not?—they still exhibit that type of intellectual beauty which subdued Egypt and reformed the penal statutes of Persia; and their fine heads are cited by science as models of the highest conformation. Bright thoughts flash from their bright eyes, quick perceptions animate their noble lineaments; and if the force of circumstances is no longer directed to elicit the higher qualities of an Esther or a Judith, the original of the prophet king of the virtuous woman, whose price is above rubies, may be found among Jewish women of modern as of ancient times, for they eat not the bread of idleness, and the hearts of their husbands trust in them.”

Silence is another virtue highly lauded, even as it is by our modern sage, Carlyle. The following are examples :

“Be wise and keep silent.”

“Silence is an ornament to the wise, how much the more to fools.”

“If speech is worth one coin, silence is worth two.”

“Speak sensibly, or not at all.”

“If you have been silent, it is easy at any time to break silence; but what is once spoken may be difficult to retract.”

The following are general proverbs, and their import may be left to themselves :—

“Wisdom is a crown for the head; modesty, sandals for the feet.”

“If a wise man is seen committing folly at night, reproach him not; in the morning, be sure, he has already repented.”

“A myrtle, though surrounded with briars, is still a myrtle.”

“If the ancients were angels, we are but men; if they were men, we are but asses.”

“One can learn from children.”

“Study on, even if not for the sake of study; though at first you may have an interested motive, in the end you will love learning for its sake alone.”

“Acuteness is akin to folly.”

"To move from one house to another costs a garment ; from one land to another, a life."

"Wine is a good medicine ; where there is no wine, medicine is the substitute."

"He that is sick had better apply to a physician."

"A physician who heals gratis, his remedy is generally good for nothing."

"A hundred sous invested in commerce give the possessor meat and wine ; a hundred sous in agriculture give him but herbs and salt."

"When two quarrel, he that ceases first is of gentler birth."

"I have plenty of money, but where are the money changers ?"

"Be brave, the heavens look favourably upon it."

"When a thief has no opportunity, he is forced to be honest."

"When a castle falls, it is still a ruined castle ; when a dunghill rises high, it is but a dunghill."

"The place does not honour the man, the man honours the place."

"The world requires the perfumer ; it also requires the tanner. Happy the man whose lot it is to be a perfumer ; unhappy he whose destiny makes him a tanner."

To comprehend this proverb it must be understood that perfumers were highly esteemed in those times ; tanners, on the contrary, were the lowest tradesmen ; it was even used as a nickname for persons of low propensities, as "Borseki," tanner.

The limits of my paper prevent my bringing before you any other proverbs than the few representative ones I have just submitted ; but I cannot refrain from introducing to your notice, a specimen of the parables of which the Semitic mind is so fertile. I have selected for obvious reasons those of extreme antiquity.

"When Noah began to plant a vineyard, the evil genius came before him, and asked, 'What art thou doing?' 'Planting a vineyard,' was the reply. 'May I help thee in thy labour,' asked the evil genius? 'Thou mayest indeed,' responded the patriarch. Before the operations were commenced, Satan brought a lamb, a lion, a swine, and a monkey, slaughtered these animals, and saturated the earth with their blood ;

and to this day it influences man. When he first beholds the fruit of the grape, he is gentle as the lamb; when he partakes of it moderately, he is strong as a lion; if he has overstepped the limit, he becomes like unto the swine, that wallows in dirt; but when he is actually drunk, he is like the monkey, imitating humanity, without reason."

Another very beautiful and poetic parable is the following:—

"When the Creator ushered forth his command, 'Let there be two lights in the firmament,' the sun rose, like a bridegroom, coming from his tent at morn, beautiful and brilliant; the earth rejoiced, the plants were refreshed, and the flowers gave forth perfume.

"But the other light, whose turn it had not yet been to appear in the firmament, stood by enviously, and murmured, 'Can two princes rule upon one throne? Why should not I be first?'

"And, pale with rage and envy, Luna was doomed to endless night. With repentant tears she prayed to her Creator for mercy, and an angel said to her, 'Thou didst envy, and through this thou hast for ever lost thine own light, and must be content to reflect that of the greater luminary. But weep no more,' continued the celestial messenger, 'because thou didst cry for mercy, thou shalt for ever be the hope of the wearied; when tired and fatigued with the burning rays of the sun, to thee they will look for repose and relief; and whilst the other reigns over busy strife, thou shalt reign over peace, and calm, and quiet.' Thus went Luna, happy and contented, into the sphere which she now occupies."

The following fable of "The Fox and the Grapes" is a Semitic version of this favourite subject:—

"A fox eyed a quantity of grapes through a trellis-work cupboard. His mouth watered longingly; but there was no means for Reynard to enter. At last, he bethought himself of a plan. 'The holes,' said he, 'are not very large; and if I fast three days, my body will become sufficiently reduced to admit me.' He did so; and, to his joy, feasted to his heart's content upon the grapes and the other good things in the larder. But, lo and behold! when Reynard wanted to escape, he had grown too fat. Poor animal! he had again to fast three days; and when all that remained to him was but the memory of the good things enjoyed, he departed in peace,

“Moral:—Man enters the world with nothing; and, however much he accumulates, he must leave the world with nothing.”

A lively instance is given in the Talmud of the reverence paid to woman, and the mutual love between husband and wife, existing in the pure Semitic race.

The daughter of a purse-proud gentleman (the race is not extinct yet), by name Kelba Sebuah, married the young and penniless Akiba, afterwards the great Rabbi Akiba; the daughter was disowned and disinherited by her rich papa for marrying one so much beneath her in wealth and station, but, after the usual experience of love in a cottage, they found that poverty was easier to think of than to bear; the wife knew her husband's capacity for knowledge, and after dividing their last coin, he, with her consent, departed to a seat of learning, where Akiba could develop his mental faculties, and they mutually agreed to work, each one in their humble sphere, until they could meet again in better times. Years rolled on, and busy neighbours gossiped to the wife that the husband merely made this love of knowledge the excuse for leaving her, seeing that he was disappointed of her father's wealth. But she believed in her husband, and one day a herald announced the approach (as was the custom in those days) of a great master, accompanied by thousands of his followers and disciples. The people rushed out to welcome the approach of the much talked of sage, and a poor, thin, ill-clad female came nearer and still more near, when she was rudely thrust aside. Akiba seeing this instantly recognised his wife, and holding her forth to the crowd of disciples and followers, said, “Ye all praise and venerate me as a great teacher, but to her, my wife, give the honour, for she was my teacher; without her I should not have been what I am now.” The rich father relented, and, as they say in the story books, forgave them, and they lived happily

ever after. Though, by the way, Akiba died a martyr in the rebellion of Barchochab. Thus matter for a modern three volumed novel existed even in those early periods.

The fear of trespassing upon your patience prevents my going any further into Semitic proverbs, and their concomitant Semiticism. The proverbs of a people always reflect their social condition, and those I have read to you speak for themselves.

I have but touched upon the surface of a problem, which has been the theme of philosophers of every age, "the vitality of races." This depends upon three great facts combined, the desire for knowledge, the love of home, and veneration for the past. It will be observed that where these characteristics are distinct, the race has a wonderful vitality. Mark the Anglo-Saxon race; its desire for knowledge is combined with the love of home, and its respect for ancestry is great to a fault. The social hearth in England is the centre of those pure and unalloyed pleasures, that have made her sons brave and virtuous, and rendered them active and useful in every zone and every climate. The domestic feeling is so strong in the Semitic breast, that a home seems to a Jew the height of human happiness. The husband is never so happy as when his wife and children sit round the social board; and to this day, if we could peep into many houses of the descendants of this race, we should see them mostly cheerful, happy, and singing merry songs of the tales and adventures of their old heroes, that live as vividly as of yore.

Another marked feature in this race is their love of knowledge and information; they seek it from whatever channel it may be offered, in any school, and of any denomination. In Hungary and Poland, the works of Plato and Aristotle are translated into their jargon dialects, as well as into pure Hebrew, and are carefully studied and understood by even ordinary workmen. I read lately that "Shake-

speare's *Hamlet*" and "Goethe's *Faust*" have been translated into pure Hebrew, and that a hundred thousand copies were sold rapidly ; some were purchased for the interior of Persia.

But the nineteenth century (I am afraid the phrase is fast becoming hackneyed) is a great leveller, and virtue and learning are really the property, more or less, of every race, and not the particular feature of any one ; indeed with respect to knowledge and science at the present day we can assert with the laureate —

" For Saxon, or Dane, or Norman we,
Teuton, or Celt, or whatever we be,
We are each all Dane in our welcome of thee."

The present generation has learned to cast off prejudice, and to acknowledge virtue wherever it existed, and they do not allow themselves to be blinded by the misrepresentations of past ages.

When we search into the literatures of various peoples, and study them, not for the sake of adverse criticism, but truthfully and impartially, we shall indeed see how true to nature, and how universally applicable, are the words of our immortal bard, when he said we could

" Find tongues in trees, books in running brooks,
Sermons in stones, and good in every thing."

TWELFTH ORDINARY MEETING.

ROYAL INSTITUTION, 5th April, 1869.

REV. C. D. GINSBURG, LL.D., PRESIDENT, in the
Chair.

A communication was received from the Council, stating that the Address to Mr. Charles Dickens would be presented to that gentleman on Wednesday, the 7th inst., at the Adelphi Hotel, at three o'clock in the afternoon, when the Members generally were invited to attend.

It was also stated that the Council had arranged to send three Delegates to the British Association Meeting at Exeter, on the same terms as last year.

Mr. A. Higginson called attention to a subject which he had frequently brought under the notice of the Society, namely, the ventilation of sewers, by connecting them with the chimneys of furnaces; and he now expressed his satisfaction that the plan was being practically carried out in Bootle. He considered it to be the most effectual mode of ventilating sewers.

An interesting specimen of the fungus tribe, sent by Mr. Alderman Bennett, was submitted to the Meeting, and its nature and characteristics were briefly explained by the Rev. H. H. Higgins.

The following paper was then read :

THE ORIGIN OF THE MUGGLETONIANS.

BY ALEXANDER GORDON, M.A.

MY object in writing this paper is to furnish an authentic sketch of the Origin of the Muggletonians, a people so obscure that I may even call them unknown. Say to ninety-nine persons out of a hundred that So-and-so is a Unitarian, and you immediately suggest doubts more or less unfavourable to the salvation of So-and-so's soul. But say, instead, that So-and-so is a Muggletonian, and you raise no theological idea whatever; you simply excite a natural amusement that any one can be found who is odd enough to identify himself with so uncommon a name. Some time ago I had occasion to examine some papers at the Public Record Office connected with this subject, and on mentioning to one of the officials the purpose of my search, "Muggletonians!" said he, "I thought the leading authority was 'Pickwick'!"*

Indeed the name has served the turn of wits, from the period of the Restoration downwards. I might refer to Tom Brown's droll and scandalous invention of the marriage of Dr. Titus Oates to one Mrs. Margaret Wells, a Muggletonian widow;† I might quote Allan Ramsay's good-humoured

* "Muggleton is an ancient and loyal borough, mingling a zealous advocacy of Christian principles with a devoted attachment to commercial rights."—*Post-humous Papers of the Pickwick Club*, chap. vii.

† "Since the saviour of the nation has join'd his saving faculty with a damning talent (for you are to understand his lady is a *Muggletonian*, and those people pretend to have the power of damnation), we may now expect to see a motly race of half-saviours and half-damners."—*The Widow's Wedding: or a true Account of Dr. Oates' Marriage with a Muggletonian Widow in Bread-*

rhymes, in which, giving a "short swatch" of his creed, he thus proclaims himself—

"Well then, I'm nowther Whig nor Tory,
Nor credit give to Purgatory:

* * * * *

Nor Asgilite, nor Bess Clarksonian,
Nor Mountaineer, nor Muggletonian;" *

and, at a later date, I might mention that singular piece of scurrilous versification, in the shape of an anonymous lampoon upon Whitfield, which owes half its raciness to the fact that it professes to proceed from a Muggletonian pen.†

Nor have more serious authors been kinder to the memory of the founders of this out-of-the-way sect, and the principles they professed. Even well informed persons are in the habit of mixing up Muggletonians and Fifth Monarchy Men,‡ as if the two were identical. When we find so genial and so acute a critic as Robert Alfred Vaughan § sanctioning a

street, London, August the 18th, 1693. In a Letter to a Gentleman in the Country. Tom Brown's Works, 9th edition, 1760, vol. iv, pp. 142-6. A curious plate, accompanying this edition, represents the Devil in one corner, engaged in tying the knot.

* *Vide* Epistle to Mr. James Arbuckle of Belfast, January, 1719; in the Glasgow Edition of Ramsay's *Poems*, 1770, pp. 149-153. In a note, p. 152, we find, "Mugletonian: a kind of quakers, so called from one Mugleton. See Leslie's snake in the grass."

† The following is the full title-page of this unseemly production:—

The Amourous Humours, and Audacious Adventures, of one WH+++++D.
By a Muggletonian.

"Jew, Turk and Christian differ but in CREED;
In ways of wickedness they're all agreed:
None upwards clear the Road; they part and cavil:
And all jog on, unerring, to the Devil."—*Lansd.*

London; printed for the Author, and sold by M. Watson, next the King's Arms Tavern, Chancery Lane; at the corner of Cock Court, facing the Old Bailey, Ludgate Hill, and at the Pamphlet Shops of London and Westminster. [Price 6d.] N. D. 8vo, pp. 29.

‡ See Letter, by J. H. D [ixon], *Inquirer*, 3rd Jan., 1863.

§ "The Muggletonians, Fifth Monarchy Men, and Ranters of those days were the exceptional mire and dirt cast up by the vexed times, but assuredly not the

similar confusion, we need not wonder that writers less precise fall into the mistake. Lord Macaulay, as a matter of course, avoids this error; but the one sentence in which he deigns to address himself to our subject is full of contemptuous unfairness. It runs thus: "A mad tailor, named Lodowick Muggleton, wandered from pothouse to pothouse, tippling ale, and denouncing eternal torments against all those who refused to believe, on his testimony, that the Supreme Being was only six feet high, and that the sun was just four miles from the earth."*

No one seems to have taken in hand to write the life of the man here alluded to, if we except the unknown author of a malicious pamphlet, brought out in 1677, on the occasion of Muggleton's being placed in the pillory.† This piece has evidently been made use of by the compiler of the brief notice of Muggleton in Chambers' "*Book of Days*."‡ It is, however, quite untrustworthy.

More recently Mr. Hain Friswell has included a paper on Lodowick Muggleton in his "*Readings from Rare Books*." This paper is of little or no value. Misled by the absence of the name from the Census returns of 1851, it speaks of the Muggletonians as being by this time extinct.§ They are, I believe, about as numerous now as ever they were;

representatives of English mysticism."—*Hours with the Mystics*, 1856, vol. ii., p. 255.

* *History of England*, 1848, vol. i., p. 164.

† *A modest Account of the wicked Life of that grand Impostor, Lodowick Muggleton: Wherein are related all the remarkable Actions he did, and all the strange Accidents that have befallen him, ever since his first Coming to London, to this Twenty-fifth of January, 1676. Also a Particular of those Reasons which first drew him to these damnable Principles: With several pleasant Stories concerning him, proving his Commission to be but counterfeit, and himself a Cheat, from divers Expressions which have fallen from his own Mouth. Licensed according to Order. Printed at London, for B. H., in 1676 [1677], 4to, pp. 6. Reprinted, Harleian Miscellany, 1744, vol. i., p. 593.*

‡ *Book of Days*, 1864, Vol. i., p. 362. The date (March 12) under which this notice appears, is an error.

§ *Varia; Readings from Rare Books*, 1866, pp. 241, 250.

and the writings of their recognised founders, which are constantly kept in print, are neither scarce nor dear, but may be had without any difficulty, on applying to the proper quarter.*

The rise of the Muggletonians is a very significant fact of that general surging up of the undercurrents of English religious life, which characterised the middle of the seventeenth century. The abnormal forms of English religion at that date have for the most part been sketched by our Church historians in a style both faint and loose, without firmness of outline, and without love for the work. Casual readers are certainly not aware what great and what varied forces of zeal and of activity were at work two hundred years ago, among what we may term the outlandish sects. People who took up Mr. Hepworth Dixon's recent volumes on "New America" were both startled and shocked at the multiplicity and strangeness of the religious communities which he describes as existing now in full vigour across the Atlantic, contemporaneously with our ripest civilisation. But exactly the same phenomena are apparent to the student of men and manners who will visit the obscure corners and travel on the by-paths of the religious history of the Commonwealth. I do not know that England contained then a community of Polygamists, or that America contains now a community of Muggletonians; but if these be exceptions, they are about the only exceptions to the completeness of the parallel. Outside the more orderly Churches, whose history is tolerably well known,—the Catholics, Episcopalians, Presbyterians, Independents, and Baptists,—a host of minor sectaries sprang up and flourished before or about the year 1650. Of these some went by a name derived from the founder of their school, as the Brownists, the Bidellians, the Behmenists, the

* Mr. William Cates, 4, Gloucester Cottages, Loughborough Park, Brixton, S., will supply any of them to purchasers.

Coppinists, the Salmonists, the Traskites, the Tryonists. Others were designated by their cardinal doctrine, as the Sabbatarians, or Seventh-Day Baptists; the Millennarians, or Fifth Monarchy Men; the Virgin Life People. Some chose their own distinctive title, as the Seekers or Waiters, the Family of Love, the Philadelphians. Others, again, such as the Dippers, the Ranters, the Shakers, the Heavenly Father Men, bore a nickname imposed by the ever ready wit of the populace. Some of these were rather *Societies* than *Sects*; and, like the early Methodists or the early Swedenborgians, went to church or conventicle at the usual hours of worship, and met for their own purposes at other times. But the tendency of Commonwealth freedom was to sectarianise these societies; just as afterwards the tendency of Restoration uniformity was to extinguish them.

To this motley assemblage of Sects, George Fox added, in the year 1649, the Society of Friends, soon to become better known by the soubriquet of "Quaker," due to the harsh humour of Mr. Gervas Bennet, justice of the peace at Derby, whom George Fox, under examination before him in 1650, had bid "Tremble at the word of the Lord!"* Not long after, in 1652, John Reeve and Lodowicke Muggleton came forward with a new doctrine, and the uncouth term Muggletonian began to be pronounced.† It is not, like the word Quaker, considered a nickname,‡ unless perhaps by younger members of the present body; and the substitutes for it, such as "Believers in the Third Record," or "Believers in the Commission of the Spirit," are too longwinded and

* *History of the People called Quakers*, by William Sewell, 2nd edition, 1725. p. 25.

† The first recorded use of the word I have found is in an abusive speech by Chief Justice Rainsford, at the Old Bailey, 17th January, 1677. "You see he has got a set of them, and makes them call themselves Muggletonians, after his cursed name."—*True Account of the Trial and Sufferings of Lodowick Muggleton*, by [Nathaniel] Powell, edition of 1808, p. 6.

‡ See Letter, by William Ridsdale, *Inquirer*, 21st March, 1863.

inexpressive for general adoption, even by Muggletonians themselves.

One circumstance which leads us to class together Quakers and Muggletonians is the remarkable fate which has made them almost the only representatives, in modern times, of that abnormal religious life of England, which produced so many singular phenomena in the heart of the seventeenth century. Not that all those sects, of which I have enumerated some, have quite faded out, so as to "leave not a rack behind." Some have developed beyond their first incipient stages. Some have been absorbed in stronger and more consistent bodies. Some have sobered down into good Christian common sense. The Seventh Day Baptists can yet show you the ghost of a Saturday congregation in the East of London; and in America are said to thrive. Plenty of orthodox persons may be found, I believe, at this day, who hold the distinctive doctrine of the Millennaries, that Christ will soon come to reign on earth for the space of a thousand years; though the old fury, which was occasionally roused in the Fifth Monarchy Men, has never inspired their modern representatives. Still, for practical purposes, the wellknown and everywhere respected Society of Friends, and the extremely obscure body of Muggletonians may be treated as the sole survivors of the commonwealth sects. Seekers, like pious John Saltmarsh, have left behind them no successors; Ranters, like John Robins, or the misguided and poetical Abiezer Coppe, have passed from human ken; Behmenists, like Humphrey Blunden or Durand Hotham, or that learned and reverend visionary Dr. John Pordage, and Philadelphians, after the fashion of Jane Lead and Dr. Francis Lee, we look for in vain to-day; but George Fox and Lodowicke Muggleton still find zealous and trusting disciples.*

* Of Churches and Sects, or Societies, in England, Alexander Ross, in his

Another circumstance, of more moment, causes us to name these two names together. They are the intellectual opposites of each other. The mutual repulsion of the schools of thought which they severally represented, contributed not a little to define each. The opponents of both made much of the points of apparent similarity between them. Charles Leslie, the Nonjuror,* and that apostate Quaker with the savoury name, Francis Bugg,† sought to discredit the claims of Fox, by holding up Muggleton to him as a mirror in which he might see his own face reflected. On the other hand, the adherents of each made matters of life and death, of salvation or damnation, out of the points of dissimilarity which separated them.

In their day, it is true, it would scarce have been possible for a man to cleave to the one, without in some measure despising the other. Contemplating them at the distance of two hundred years, I can please myself with the indulgence of a liking which is broad enough to take in the two. At least I know I love George Fox, while I cherish a sneaking kindness for Lodowicke Muggleton, and stand somewhat in awe of them both. No greater contrast of character can well be imagined than exists between these rival founders of sects. Muggleton is arrogant, dogmatic, and perfectly free from enthusiasm; George Fox, gentle and persuasive, but with an underglow of fiery flame which leaps forth sometimes, and burns up all before it. Muggleton is shrewd in

Πανορθεια, or a View of All Religions in the World, etc., 1653, mentions sixteen. George Fox enumerates fifteen sects, with which he had held reasonings in 1661 (*Journal*, edition of 1852, Vol. i. p. 395). And in the *Post-Boy robb'd of his Mail*, etc., second edition, 1706, pp. 422-432, there is a description (by John Dunton?) of the tenets of twenty-four English Sects and Churches as existing in 1692.

* *The Snake in the Grass, or Satan transformed into an Angel of Light*, [by Charles Leslie,] 1696, pp. lxxv.-lxxviii., 9-10, etc. See also the second part of the *Defence of the Snake in the Grass*, Leslie, Theolog. Works, 1721, vol. 2, p. 357, for a curious comparison of the two men as to their personal appearance.

† *The Pilgrim's Progress from Quakerism to Christianity*, by Fr. Bugg, second edition, 1700, pp. 17-20.

his knowledge of men and of business, and far from disdaining the enjoyment of a full meal, a glass of ale, and a pipe of tobacco; * George Fox, in worldly matters unversed, is a child for simplicity, spare and abstemious by choice in his diet and ways. † Both are resolute and honourable men. No greater contrast of faith can easily be thought of than theirs. For while Muggleton comes before us declaring that God lives in regal state "above the stars," and interferes not with things below; while he believes religiously that prayer is a mark of weakness, a remnant of the corrupt nature, and that outward worship of any kind is a folly and a mistake; George Fox, on the other hand, is a man who dwells with God as an ever-present Spirit, who prays as no man had ever prayed before, ‡ and institutes that most impressive and spiritual of all Church-worships, the silent meeting of Friends.

Yet, to come to points of coincidence, both these men were bold enough to assert that a new era in religion had begun, the era of the Spirit; that forms were of no value, ordinations and consecrations null and void; the life the evidence of the truth; and salvation the effect of a spiritual principle—a *seed*, as they both called it—quickenened invisibly by God, in entire independence of outward professions and creeds. These opinions, and the like, were indeed part of a common stock of notions floating, as it were, in the air; and appropriated by each rising sect after its own fashion, as

* See *Acts of the Witnesses of the Spirit*, 2nd edition, 1764, p. 50. v. 12, p. 57, v. 11; *Spiritual Epistles*, 2nd edition, 1820, p. 497; Penn's *New Witnesses proved Old Heretics*, 1672, p. 38. This last not very friendly account was evidently in Lord Macaulay's mind when he penned the sentence already quoted; but Macaulay, as is his wont, adds a strong colour of his own. None of his contemporaries charge Muggleton with insobriety.

† See *Journal of G. Fox, ut supra*, vol. i., p. 50, and Penn's *Preface*, p. 35 "Civil beyond all breeding in his behaviour; very temperate, eating little and sleeping less, though a bulky person."

‡ "The most awful, living reverent frame I ever felt or beheld, I must say, was his in prayer." So writes the placid and lawyerlike Penn. *Preface*, p. 82.

indications of its revolt against the tyranny of established Churches and the dead level of traditionary creeds. So too, the refusal to bear arms, and the objection to take oaths, were points of conscience not peculiar at that day to the Quakers and Muggletonians, but shared by them with many seekers after truth, who attained no permanent organisation, and have left scarce any traces of their influence on our religious history.

These things they held in common, and these things might possibly have drawn them together, had not a powerful influence kept them apart. The England of that day was not ignorant either of the name or of the charm of a German thinker, by whose mystical philosophy Muggleton, for a moment captivated, was quickly and permanently repelled. This was Jacob Boehme, or (if I may still use that old English corruption of his name, by which he was known to Sparrow and Elliston, to William Law and Francis Okely) **JACOB BEHMEN.***

At the beginning of the seventeenth century, there dwelt in the small town of Görlitz a hardworking respectable mechanic; a man of no learning, of no striking presence, with a bright gray eye, and a bent, worn frame; who lived harmless and retired with his wife and his four sons, and made and mended shoes for a livelihood; but who had imaginations beyond his craft, who saw deep into the mysteries of things, whose heart swelled within him till it threatened to burst the harness and trappings of orthodoxies, and sects, and schools. For a time the fire smouldered in his thought and did not break forth; for a long while the vision and the insight remained undisclosed to the world;

* Jacob Boehme was born in 1575, and died in 1624. His surname is also given in German writings as Boehm and Boehmen; and in its English form appears as Beem, Beme, Behme, Behemen, Bemon, Beamon, Bemond, Bemand, Behmont, etc.

but, going into the fields one morning at daybreak (ten years after the first luminous revelation had dazzled and startled him), the radiance of a more than earthly glory met and overpowered his soul; and with slow and quivering words, with rude and uncouth turns of phrase, he sat down at length to write. "*Morgen Röthe im Aufgang*" (Morning Red in the Orient)* was his first book. A more strange and subtle series of books than those which this humble cobbler of shoes produced in the dozen of years which intervened between 1612 and his death in 1624, never perhaps flowed from mortal pen. These were books, whose object was to set forth the utter worthlessness of books; arguments which were to expose the fallacy of blind human reason; treatises in which a devout communicant and hearer of sermons would refine away the sacraments into mere acts of the inward life, would countenance no preacher but the Holy Ghost, and would assert that by salvation, or the soul's health, is meant the effect of no dogma, and the result of no purchase, but only the felt presence of Christ living in human souls.

This shoemaker of Görlitz, little as he is known and read by us at the present day, has had many English followers, admirers, interpreters; but upon one Englishman his spiritual mantle seems unconsciously to have fallen. The year which saw Behmen die, witnessed the birth of Fox; as if Providence were willing to provide immediately a successor to the spirit which was passing away. Both sprang from the people, both were shoemakers by trade, both were of singularly innocent and guileless character, both had visions and revelations in early youth and in maturer age, both had laid open to them, in addition to the

* Called afterwards *Aurora*, at the suggestion of his friend Dr. Balthasar Walter. Behmen himself published nothing, except the *Way to Christ*, in 1622; but his writings were copied and circulated in manuscript. The history of their appearance in print after his death is curious.

deep things of the spiritual life of man, the mysteries and occult qualities of nature, the virtues of plants, metals, minerals;* in short, from both the veil of the world was lifted, and they saw in man, in the universe, and in the Bible, things which not only the holy and the wise but even the angels desire to look into; and in the fruit of this knowledge both wrote, not as they themselves were minded, but as the unerring Spirit moved. There are passages in the Journal of George Fox which read exactly like passages from the Letters of Jacob Behmen; and though, in the case of Fox himself, it is clear that the resemblance is due not to any reading, but to a real community of spiritual gifts, yet the early Quakers, as we know from various sources, pondered and cherished Behmen's writings. The Quaker spirit and the spirit of Behmen were one,† and against that spirit Muggleton warred with all his heart.‡ How he came to do so, we shall better understand when we have traced the course of his early history, which is best read in his own quaint, racy, and picturesque account. In transferring the narrative from the "*Acts of the Witnesses of the Spirit*" to these pages, I shall take the liberty of condensing, and occasionally of transposing, and shall be able to add from other sources some illustrative matter.

LODOWICKE MUGGLETON, then, was born in Walnut Tree Yard, off Bishopsgate Street, London, at the end of July,

* This is often forgotten in regard to Fox; but see his *Journal*, *ut supra*, vol. i., p. 66. "I was at a stand in my mind whether I should practise physick for the good of mankind, seeing the nature and virtues of things were so opened to me by the Lord."

† See the *Looking Glass for George Fox*, 2nd edition, 1756, p. 10. "Jacob Behmont's books were the chief books that the Quakers bought, for there is the principle or foundation of their religion; for they cannot go beyond that, but there they build. This I know by William Smith's letters to me; and you George Fox are far below William Smith in the knowledge of Jacob Behmont's writings."

‡ "I did wear ribbons on purpose that I might not be taken or thought to be a Quaker, for I do hate the Quakers' principles." *Spiritual Epistles*, *ut supra*, p. 242.

1609.* The family to which he belonged had its ancestral home at Wilbarston, near Market Harborough; indeed the original stock of the Muggletons exists there still, and must have been native to Wilbarston for upwards of three centuries. "Our forefathers," he writes, in 1678, to his cousin, Roger Muggleton of Wilbarston, "were all plain men, yet downright honest men; men of no great repute in the world, nor of base report, as ever I could hear." His father, John Muggleton, was a smith and "farrier, or horse doctor, ... in great respect with the Post Master in King James' time." Of three children born to him by Mary his wife, "I," says Lodowicke, "was the youngest, and my mother loved me. But after my mother died,† I being but young [only three years old] my father took another wife; so I ... was exposed to live with strangers in the country, at a distance from all my kindred. I was a stranger to my father's house after my mother was dead.‡

"When I was grown to fifteen or sixteen years of age, I was put apprentice to one John Quick, a tailor ... a quiet, peaceable man, not cruel to servants, which liked [pleased] me very well, for my nature was always against cruelty, I could never endure it neither in myself nor in others. ... I took my trade well, and pleased my master better than any of his other servants ... hating drunkenness and lust in

* The Register of Christenings at St. Botolph's, Bishopsgate, for 1609, contains this entry, "Lodowicke the sonne of Johne Muggleton bapt. ye 30 of Julye." His Christian name is usually spelled Lodowick; sometimes, by a misprint, Lodwick; or, through ignorance, Ludovick. He himself seems always to have signed Lodowicke. Perhaps it was a family surname. The burial of a John Lodowicke appears in the Register of St. Botolph's in 1612.

† The Register of Burials at St. Botolph's for 1612 contains the entry:—" [Aged] 35, Marye daughter Muggletone bury~ ye 30 of June."

‡ In J. Payne Collier's *Memoirs of Edward Alleyn, Shakespeare Society Publications*, 1841, pp. 133-135, there are two letters addressed to Alleyn by Stephen Gosson, Rector of St. Botolph's (author of the *Schoole of Abuse*) which refer to the admission, in October, 1616, of John Muggleton, a poor person, upon the point of threescore years, to Alleyn's Hospital (God's Gift College, at Dulwich), and his removal therefrom for some unexplained cause in August, 1617.

the time of my youth. When my time of service was pretty far expired, I heard great talk amongst the vulgar ... of a people called Puritans; some of these Puritans came to talk with my master, though he was no religious man. ... Methought I had a love for those people called Puritans, and ... liked in myself their discourse upon the Scriptures, and pleading for a holy keeping of the Sabbath-day, which my master did not do, nor I his servant. ... In that great sickness after King James died, I was smitten with the Plague,* but I recovered quickly, and have not had half a day's sickness since. ... I never bestowed sixpence in physic in my life. ... My time of service grew near out, and my nature had a great desire to be rich in this world, that I might no more be servant to any man; and I thought the trade of a tailor would not gain much riches, I having little to begin with.† So I went to work in a broker's shop in Houndsditch, who made clothes to sell, and did lend money upon pawns ... a kind of distracted, hare-brained man, his name was Richardson. The broker's wife had one daughter, and after I had been there awhile, the mother seeing that I ... knew how to manage, ... was willing to give her daughter to me to wife; and I loved the maid well. ... So the maid and I were made sure by promise ... and I was resolved to have the maid to wife, and to keep a broker's shop, and to lend money upon pawns, and grow rich as others did. ... But in the twenty-second year of my life, not being quite out of my apprenticeship ... I went to work as a journeyman ... with William Reeve, John Reeve's brother. He was a very zealous Puritan at that time, and many of that religion ... disputed with me about the lawfulness of

* It began at the end of March, was at its height in the middle of June, and lasted till November, 1625; it swept away 35,417 persons.

† He says, in his *Answer to William Penn*, 2nd edition, 1751-3, p. 129, "I never received sixpence portion of my father," and speaks of having had to assist his father instead of to receive from him.

lending money upon pawns, because they pleaded it was usury and extortion. ... I used all the arguments of reason I could for it, because I had a great desire to be rich, and ... I was engaged to this maid, and her mother would not let me have her to wife except I would keep a broker's shop and lend money. ... But these Puritan people ... pressed the Scriptures hard upon me; which exceedingly perplexed my mind, reasoning in myself that if I did lend money upon usury and extortion I should be damned; and if I would not, then I should not have the maid to wife. So that the love of the maid, and the fear of the loss of my soul did struggle within me. ... After much struggling in my mind I came to this resolution, that rather than I would lose my soul I would lose the maid. ... Thus I forsook the world and a wife. ... She is yet alive, and is worth seven hundred pounds a year." *

His account of the "working of his thoughts" at this time is exceedingly curious and full. In due course he became "earnest in the Puritan religion and practice ... was well versed ... in the letter of the Scriptures, had a good gift of prayer, and was very strong in disputes." "Neither did I hear any preach in those days but the Puritan ministers, whose hair was cut short; for if a man with long hair had gone into the pulpit to preach, I would have gone out of the church again, though he might preach better than the other." Long after his entire change of opinion, he bears testimony to the strength of Puritan principles; "there is no better faith in the world to this day (1677) in the generality of professors of religion." But in spite of all his zeal, he trembled every day under the dread of hell, and "for fear God had made him a reprobate before he was born." †

His domestic life scarcely seems to have contributed to

* *Acts of the Witnesses, ut supra*, pp. 6-11.

† *Ibid.*, pp. 11-15.

the healthier action of his mind. He married twice during this his Puritan stage, each time to "a virgin of about nineteen." * Of his wife Sarah (whom he married about 1635, and who died in 1638 or 1639) we know nothing, except that she was the mother of the two daughters who survived him; but of his second wife, Mary, (whom he married in 1642 and who died in 1648) he tells us in one of his letters, that she "was a comely woman to see to, yet of a melancholy, dropsical nature and humour," given to much melancholy and discontent of mind, especially "if things did not go well in this world, as no man can assure his wife all things shall always." When her only surviving child, a scrofulous boy, died in 1653, "I was glad," says he, "(though I used means to help him, but all in vain) knowing that all the children I had by her did partake of her melancholy and dropsical nature." †

The outbreak of the civil war proved a crisis in his religious history. "The Puritans," he says, "were all for the Parliament, and most of my society and acquaintance in religion did fall away from that way we did use, and declined in love one towards another, and every one got a new judgment, and new acquaintance, and a new discipline. Some of them turned to Presbytery ... some turned Independents ... others fell to be Ranters, and some fell to be mere Atheists. Our Puritan people were so divided and scattered in our religion that I knew not which to take to, or which to cleave to. I was altogether at a loss. All the zeal we formerly had was quite worn out, and join with any of these new disciplines I could not, except I would play the hypocrite for a livelihood, which my heart always hated. ... So I gave over

* *Acts of the Witnesses*, *ut supra*, p. 15.

* *Spiritual Epistles*, *ut supra*, p. 414, in a letter addressed to Mrs. Hampson, dated 11 June, 1674.

all public prayer, and hearing and discourse about religion, and lived an honest and just natural life; and I found more peace here than in all my religion. .. I considered that innocency of heart and a just, upright spirit was good in itself, if there was no God to reward it; and that unrighteousness and lust was wickedness in itself if there were no God to punish it ... and if there were anything, either of happiness or misery after death, I left it to God ... to do what He would with me. But I was in good hope at that time that there was nothing after death.”* This lasted till he was about forty years old, viz., to the year 1650.

In this year London was rife with the intelligence of several “Prophets and Prophetesses, that were about the streets, and declared the Day of the Lord, and many other wonderful things, as from the Lord.” Chief among these enthusiasts were two men, by the magnitude of whose pretensions Muggleton was evidently impressed, and whose names figure often in his and his coadjutor’s writings as the types of all spiritual usurpation. These were John Robins and Thomas Tany.

JOHN ROBINS is a fair specimen of the wildest of the Ranter tribe. He was identified by his followers with God Almighty, was known in popular parlance as the “Ranters’ god” and the “Shakers’ god,” and though, under examination, he denied the blasphemy,† it is clear that in private he was far from discouraging it, but allowed a species of divine worship to be addressed to him.‡ His follower, Thomas Tidford, did not scruple to affirm “that John Robins was

* *Acts of the Witnesses*, ut supra, p. 16, and again p. 19.

† See *The Declaration of John Robins, the False Prophet, otherwise called the Shakers’ God*, etc., London, 1651, 4to, pp. 6.

‡ See, in addition to Muggleton’s personal testimony, *Ranters of Both Sexes, wherein John Robins doth declare himself to be the Great God of Heaven*, etc. by John Taylor, London, 1651, 4to, pp. 6. Also *A List of some of the Grand Blasphemers and Blasphemies, which was given in to the Committee for Religion*, London, 1654, broad sheet.

God the Father, and the Father of our Lord Jesus Christ ;” and in accordance with this empty deification, Joan (or Mary) Robins, his wife, indulged a similar fancy to that which, within the last hundred years, filled the disordered imaginations of Ann Lee and Joanna Southcott. In addition to a fluent utterance and a vast knowledge of the Scriptures, Robins possessed, according to the belief of his followers, the faculty of working many marvels. He even claimed the power of raising men from the dead, and had actually raised up thus, according to his own statement, that same Cain that killed Abel, Benjamin, the son of Jacob, the prophet Jeremiah, that same Judas that betrayed Christ, and now they were all redeemed to be happy. “I have had nine or ten of them at my house at a time,” says Muggleton, “of those that were said to be raised from the dead. For I do not speak this from a hearsay from others, but from a perfect knowledge which I have seen and heard from themselves.”* He put forth a wild scheme for gathering, out of England and elsewhere, an hundred and forty-four thousand men and women, whom he and Joshua Garment, his right hand man, his Moses, would lead to Jerusalem to the Mount of Olives, there to make them happy. He would divide again for them the Red Sea, and they should cross the gulf dryshod. He would feed them with manna from heaven ; and, as a preparation for this celestial food, he trained his followers to live on nothing more substantial than “windy things, apples and other fruit,” (a diet under which several of them starved) and to drink nothing but water. As for ale, that was prohibited, “because it is not of God’s making.”† These were but a few of his extravagances.

With this outrageous fanatic and his followers Muggleton was for a time in close intimacy ; not that he ever joined

* *Acts of the Witnesses, ut supra*, pp. 20-21.

† *Declaration, ut supra*, p. 5.

them, but, as he says, "I was quiet and still, and heard what was said and done, and spake against nothing that was said or done." *

THOMAS TANY was an enthusiast of a somewhat similar stamp, though it does not appear that he ever reached the summit of Robins' claims. In Robins there was more of method, in Tany more of madness. Originally he had been settled in business as a goldsmith, in the Strand; but the distractions of the times, and the fascination of Jacob Behmen's books had evidently turned his head, and he came before the public in a new character. In a "Proclamation" which he published on the 25th April, 1650, dated "from the Three Golden Lions, without Temple Bar," he says, "I am a Jew of the tribe of Reuben; but unknown to me till the Lord spake unto me by voice; whose voice I heard, but saw no appearance, and He changed my name from Thomas to *Theaurau John*,† since the 23rd of November, 1649." Under this strange appellation he wrote several books, which were issued by the wellknown publisher of mystical works, Giles Calvert, at the Black Spread Eagle, at the West end of Paul's. In these books all the peculiarities which perplex the students of Behmen are so ridiculously exaggerated, as to render the pages of Tany little better than sublime nonsense. His writing stutters and stammers just as, we are told, did his tongue. He is a Behmen gone mad, yet with bright flashes of intelligence gleaming out now and then from beneath the load of ashes and rubbish. ‡ Besides his pan-

* *Acts of the Witnesses*, ut supra, p. 22.

† Hence Reeve and Muggleton invariably refer to him as *John Tany*. His surname, which appears as Tany in the *Proclamation*, and in the *List of Grand Blasphemers*, 1654, ut supra, is also spelled by himself Tanni, Tanniour, Taniah, and Totni, and by others, Tane, Tanee, Tauny, Tannye, Taney, Tauney, and Tawney. Evidently it is the French *tané* (now *tanné*), our *tawny*.

‡ I am acquainted with two of these books; his *Theousori Apokolipikal*, or *God's Light declared in Mysteries*, etc., London, 1651, 4to, pp. 78, with Preface,

theistic writings, his head was full of schemes for the restoration of the Jews. He, too, was to conduct a mixed multitude to the Promised Land, and, as the Lord's High Priest, was to enact again the Law of Moses; therefore he circumcised himself according to that Law.* His mission was to follow John Robins with bow and spear. As the lineal descendant of "Charles of Castille, who was son-in-law unto Charles the Great," he claimed the throne of France, nay, the thrones of seven nations. Like John Robins, he came for a season within the clutches of the law. He suffered six months' imprisonment in Newgate, and this probably lost him his business. He changed his residence from the Strand to the City, and at length left London altogether, and went to live at Eltham. He was accused of openly burning the Bible at Lambeth, calling it the "Great Idol of England." Among those who took pity upon him was Dr. Pordage, the wellknown Behmenist and Philadelphian, at whose house he was now and then entertained for a week or a fortnight at a time.†

It is clear that the pantheism which lay at the basis of the fanaticism of both Robins and Tany had caught hold, for a time, of Muggleton's mind. The perusal of Jacob Behmen's works strengthened it in him. Many years afterwards he thus wrote concerning Behmen: "His philosophical light was above all men that doth profess religion, until this Commission of the Spirit came forth; which hath brought Jacob Bemon's light and many other high lights down very

and his *Disputative Challenge to the Universities of Oxford and Cambridge*, 8vo, pp. 8, N. D. His first work was a treatise entitled *Aurora in Tranlagorum*, etc., London, 1651, 4to, pp. 60, and Introduction. Nothing but an actual facsimile would give any idea of the oddness of his title pages. For a summary of his heresies, see Ross, *Pantheism*, *ut supra*, pp. 377-379.

* *Acts of the Witnesses*, *ut supra*, p. 20.

† See Christopher Fowler's *Dæmonium Meridianum*, etc., 4to, London, 1655, part i., pp. 53, 60.

low within these ten years.”* Once more he fell into a deep melancholy, from which he was at length delivered by just that same experience of inward revelation which formed the turning point in the religious lives of Behmen and Fox. He is able to give a precise date to the commencement of this inward revelation, even to the exact hour of the day. The windows of heaven were opened to him. He says, “I was in the Paradise of heaven, within man upon earth; neither could I desire any better heaven.”† He took down the Scriptures, which he had laid aside some years before, and found they were now all plain to his understanding; he wondered no longer at any of the rapturous expressions of prophets or apostles. A single touch more, a slight kindling of enthusiasm, and he might have become a Behmenist or a Quaker. But it is observable that all the while this state lasted he was never moved either to write, as Behmen, or to preach, as Fox. He was so well satisfied and happy that he was resolved now to be quiet and still, and to get as good a living as he could in this world, knowing that all things would be well with him hereafter. “But when I thought to be most secure and most private, in a little time after it made me the most public; I not thinking that this revelation was a preparation for God to choose me to be a Commissioner of the Spirit, to declare the mystery of the true God, and the interpretation of the Scriptures ... whereby I was made the most public man in the world in spiritual things.”‡

This revelation continued with him from April, 1651, to January, 1652. “And in the same year John Reeve came often to my house.” Compared with his cousin Lodowicke, who was the real builder up of the Muggletonian faith, from

* *Spiritual Epistles, ut supra*, pp. 45, 46. The letter is addressed to his friend Mrs. Ellen Sudbury, and bears date 28 Nov. 1661.

† *Acts of the Witnesses, ut supra*, p. 32.

‡ *Ibid.*, p. 35.

whom it rightly takes its name, John Reeve, its prime source, holds but a shadowy place.

JOHN REEVE was a Wiltshire man, of a family which had fallen to decay. His father, Walter Reeve, gentleman, is described as "clerk to a deputy of Ireland," an office which I do not understand. His two sons, William and John, were both apprenticed in London to the tailor's trade; and John, who was born in 1608, was already out of his apprenticeship when Lodowicke Muggleton became acquainted with him. As to the precise connection between their families, which made the two men cousins, I have no information.*

Reeve's early religious history, I dare say, ran parallel with that of his cousin. Like Muggleton, he was a man of no learning, "no Latin scholar"; nor was he even a great reader, as Muggleton claims to have been.† Like his brother William, he doubtless began by being a Puritan; he was certainly, like that same brother, afterwards bitten by the Ranter spirit. William Reeve, we know, lost himself entirely in this direction, became a mere sot, and lived on the charity of others. During the Ranter stage of his experience John Reeve became, under the guidance of John Robins, a Universalist. "John Robins' knowledge and language overpowered John Reeve," as Muggleton testifies.‡

John Reeve emerges from obscurity at the period of Muggleton's illumination, and we find him constantly at his cousin's house in Great Trinity Lane, extremely earnest to have the same revelation as Muggleton had. "His desires were so great that he was troublesome unto me; for I could not follow my business quietly for his asking me questions. If I went out of one room into another, he would follow me,

* In *Acts of the Witnesses*, *ut supra*, p. 45, it is said of the husband of one Dorcas Boose, "He was some kin by marriage to John Reeve and me both."

† *Divine Looking Glass*, 3rd edition, 1719, preface; *Whole Book of Revelation*, 3rd edition, 1808, p. v.

‡ *Acts of the Witnesses*, *ut supra*, p. 39.

to talk to me; so that I was weary of his company. Yet I was loath to tell him so, because I knew he did it out of innocency of his heart, and love to the things which I spoke.”* However, one morning, about the middle of January, 1652, Reeve came in with a very joyful voice, exclaiming, “Cousin Lodowicke! Now I know what revelation of Scripture is as well as thee!” The cousins conversed, and compared their experiences. The result, in Reeve’s case, was as full and glad a sense of peace as had already taken possession of the soul of Muggleton. He gives utterance to his feelings in language which is a mere echo of his cousin’s words. “Cousin Lodowicke! Now I am satisfied in my mind, and know what revelation is; I am resolved now to meddle no more with religion, nor go forth after any upon that account [referring to his having gone after John Robins on that account], but to get as good a livelihood as I can in this world, and let God alone with what shall be hereafter.” “Thus,” adds Muggleton, “when he thought to be most quiet, and not to meddle with any about religion — and so did I also then — a little while after we were made the greatest meddlers in religion of all men in the world, because our faces were against all men’s religion in the world, of what sect or opinion soever, as will appear hereafter by our writings and speakings. John Reeve nor I little thought, at that time, that this revelation we had given us did prepare us for a greater Work than for the peace of our own minds; but it proved that God prepared us for a Commission, and that he did intend to chose us two to be his last Prophets and Witnesses of the Spirit, as will be seen.”†

This “little while after” was but the space of two weeks.

* *Acts of the Witnesses, ut supra*, p. 36.

† *Ibid.*, pp. 38–39.

For the account of what took place at the close of that period, I must abridge John Reeve's own testimony, as given in the "*Transcendant Spiritual Treatise*." On the 3rd of February, 1652,* "the Lord Jesus, the only wise God, whose glorious person is resident above or beyond the stars, ... by voice of words spake unto me, John Reeve, saying, 'I have given thee understanding of my mind in the Scriptures, above all men in the world.' The next words the Lord spake unto me were these, 'Look into thy own body, there shalt thou see the kingdom of heaven and the kingdom of hell.' ... Again ... 'I have chosen thee my last messenger for a great Work unto this bloody, unbelieving world; and I have given thee Lodowicke Muggleton to be thy mouth.' ... Again, 'I have put the two-edged sword of my Spirit into thy mouth, that who[m]ever I pronounce blessed through thy mouth is blessed to eternity, and who[m]ever I pronounce cursed through thy mouth is cursed to eternity.' When I heard these words, my spirit desired the Lord that I might not be His dreadful messenger. For indeed I thought upon the delivery of so sad an unexpected message unto men, I should immediately have been torn to pieces. Again the Lord spake ... 'If thou dost not obey my voice, and go wherever I send thee to deliver my message, thy body shall be thy hell, and thy spirit shall be the devil that shall torment thee to eternity.' Then, for a moment, I saw this hell within me; which caused me to answer the Lord these words, saying, 'Lord, I will go wherever thou sendest me, only be with me.' These were the Lord's words spoken unto me the first morning, and my answer

* As this event is invariably referred to by Muggletonian authorities as taking place in 1651, it is necessary to observe that Reeve and Muggleton used the ecclesiastical mode of reckoning, which was commonly employed in London, and which began the year on the 25th March (see *Spiritual Epistles*, *ut supra*, p. 492). Hence the date of the commission may be variously given as 1651, old style, or 165½, or 1652, which is our modern reckoning. The same correction is needed for many of the dates in Muggleton's correspondence, etc.

unto my God; I being as perfectly awaked when He spake unto me, the Lord is my witness, as I was at the writing hereof.” *

That morning, when, as usual, John Reeve ran to his cousin's house, “I asked him,” says Muggleton, “what was the matter; for he looked like one that had risen out of the grave (he being a fresh coloured man the day before); and the tears ran down his cheeks apace. So he told me the same words as are written in his first book, and said unto me that God had given him a Commission; and that He had given Lodowicke Muggleton to be his mouth; and said at the same time was brought to his mind that saying that Aaron was given to be Moses' mouth. What *my* message was, he could not tell; ‘but,’ said he, ‘if God do not speak unto me the next morning, I will come no more at thee.’ Which I was in good hopes he would not, for I was willing to be quiet.” †

Next morning, however, came a message (again “by voice of words,”) bidding Reeve and Muggleton go together and deliver an admonition to “John” Tany; which they did, with some unction. Tany disregarded the admonition; whereupon Reeve, in obedience to his Commission, wrote the sentence of eternal damnation against him. Poor Tany soon after employed his distracted wits in making tents for the twelve tribes. At length he built a little boat to carry him to Jerusalem, wherein trusting himself to sail across to Holland, in company with one Captain James, for the purpose of gathering the Jews there, the frail vessel was wrecked, and he and his companion were drowned. “So all his power came to nothing.” ‡

On the third morning came, in the same way, a message

* *A Transcendant Spiritual Treatise*, etc., edition of 1756, pp. 4-5.

† *Acts of the Witnesses*, *ut supra*, p. 41.

‡ *Ibid.*, pp. 42-45.

of still more peremptory character to be delivered to John Robins, at that time a prisoner in New Bridewell. Without even that chance of a respite which is implied in a premonitory warning, John Robins was enrolled among the damned. "That body of thine, which was thy heaven, must be thy hell; and that proud spirit of thine, which said [it] was God, must be thy devil; the one shall be as fire and the other as brimstone burning together to all eternity. This is the message of the Lord unto thee." Robins, on hearing the curse uttered, "pulled his hands off the grates, and said, 'It is finished; the Lord's will be done.' These were all the words he spake." Two months after this he wrote a letter of recantation, addressed to Lord General Cromwell, and so obtained his release from prison. "He said, afterwards he should come forth with a greater power; but he never came forth more with any power at all to his dying day." †

The two men, against whom the curse of God was thus pronounced, were regarded by Reeve and Muggleton as typical of the upstart errors of the time in matters of religion. Tany was the representative of the Ranters' and Quakers' principles. Robins was the representative of all false Christs, false prophets and prophetesses, of whom there were many in that day; he was the Antichrist, or Man of Sin, mentioned in Scripture; there should come none after him with such high and delusive claims, to the world's end. The sentence passed on these men, and the consequent fall of their power, cleared the way for the Commission of the Spirit, and hence is very frequently referred to in the writings of the pair of cousins.

Reeve and Muggleton now came forward in their character as Prophets. Building upon an obscure intimation in the eleventh chapter of the Apocalypse, they proclaimed them-

† *Acts of the Witnesses, ut supra*, pp. 47-48.

selves the two Witnesses of the Spirit, the Lord's Last Messengers, the Commissionated Forerunners of the visible appearing of the Lord Jesus Christ, the only true God. Their office was twofold; first, as declarators of life and death eternal to individuals; and secondly, as expositors of a new system of faith and religion to mankind.

On carefully looking through their works, I find the names of forty-six persons who were individually assured (either by word or by letter) of their eternal blessedness, and of one hundred and three, who were similarly assured of their eternal misery. Both lists are very curious. The white list begins with the names of Muggleton's own children, Sarah and Elizabeth, and a boy not named, who were blessed by John Reeve on the eventful morning of the 3rd February, 1652; it ends in 1691 with the name of Sarah Delamaine, daughter of Alexander Delamaine the elder, to whose care is due the accumulation and transcription of that large and valuable collection of Reeve and Muggleton's correspondence, afterwards published as "*A Volume of Spiritual Epistles.*" In the black list, which goes no further than 1677, occur the names of the principal men among the early Quakers, *e. g.*, Fox, Whitehead, Penn, Penington; indeed more than half of those on the condemned list are Quakers.

The names recorded do not nearly cover the whole number of those who received the Muggletonian sentence, either at the hands of the Prophets themselves or of their immediate followers. This was not a sentence given at random. Reeve and Muggleton did not affirm that they had arbitrary power to bless or curse whom they would; but if any one committed the sin against the Holy Ghost, which sin the Scripture makes unpardonable, and which they believed to consist in denying the validity of any Commission sent by God, then the Prophet had authority to declare, and was bound to

declare that person eternally lost. "Whoever," write the Two Witnesses, in the second year of their Commission, "is left, great or small, to speak evil of this Commission which God hath put unto us, by calling it blasphemy, delusion, a devil, or lie; in so doing they have sinned against the Holy Ghost, and must perish, soul and body, from the presence of our God, elect men and angels to all eternity; for God hath chosen us two only, and hath put the two-edged sword of the Spirit into our mouths as before said, that whom we are *made to pronounce* blessed, are blessed to eternity, and whom we are *made to pronounce* cursed, are cursed to eternity."* By the application of this plain principle the exercise of so tremendous an authority is carefully distinguished from caprice. It rather vindicates for itself the character of a *lex talionis*, or tooth-for-tooth principle; and it is true that no language could well be stronger than that which, in the testimonies of Josiah Coale, William Penn, and many other Friends, was hurled against Muggleton.† "As for your saying," he writes to Richard Farnworth, "that I have reviled, cursed, and damned the beloved people of God, meaning you Quakers; to that I say, I never did curse any of them till such time as they did judge or despise my commission first; for I never do judge first."‡ However forbearant the Prophet may have been before passing his sentence of damnation, he certainly rejoiced in it, when given, with a stout robust appetite, worthy of Tertullian. "Whitehead said he did hear one that I had damned say, that I had said I was as glad I had given judgment and sentence of damnation upon him as if one had given me forty shillings. This I did

* *Spiritual Epistles*, *ut supra*, p. 5.

† *E. g.*, "Muggleton, and his obstinate brats, shall howl in the lake that burns with brimstone and fire for ever and evermore."—Penn's *New Witnesses*, *ut supra*, p. 42.

‡ *Neck of the Quakers Broken*, 2nd edition, 1756, p. 67.

acknowledge to be true.”* “Oh how happy,” he bursts forth, in a letter to Colonel Robert Phaire, “are we that shall sup with the great God, *i. e.*, in the assurance we have that God hath ordained wicked persecuting kings, and high captains, and judges, and mighty men more than the sand of the sea shore which cannot be numbered, to be damned to eternity. These I know shall be cast into a lake of fire, burning with brimstone to all eternity; and we, the fowls of heaven, shall eat or feed upon the miseries of these mighty men, as in a supper with the great God.”†

As a set off against this full-blooded rapture of vengeance inspired by the sense of personal wrong, let it be remembered that it never was any part of the Muggletonian faith that none but Muggletonians can be saved. It is true that the Doctrine of the Third Commission is the touchstone of a man's spiritual condition, so that none who wilfully and knowingly reject it can be saved, and none who truly embrace it can be lost; but the real cause of salvation or of damnation lies far deeper than any intellectual act. There is a radical difference of race between the saved and the damned.

The religious philosophy of Reeve and Muggleton hinges on their cardinal doctrine of the Two Seeds, which give rise to two distinct races of beings whose attributes have come to be blended in human kind. At the root of their faith are Two Prime Mysteries; the mystery of God becoming flesh, and the mystery of the Devil becoming flesh. In Eve the Devil, a fallen Angel, once the noblest of that race whose nature is pure Reason, dissolved himself into seed; melted himself down, so as to lose personality; and Cain was born, a man-devil. Cain and his descendants are the Devil made flesh; a totally distinct race from Abel, and his brethren

* *Spiritual Epistles*, *ut supra*, p. 241. Omitted in *Acts of the Witnesses*, p. 117.

† *A Stream from the Tree of Life*, etc., 1758, p. 28. See also much more to the same purpose, *Spiritual Epistles*, pp. 560-561.

and their descendants, who, through Adam, inherit the pure life of God: for "the soul of Adam was of the very nature of the spirit of God." When the sons of God intermarried with the daughters of men, for the first time these two races mingled, and a mixed brood has been the result ever since. Every man is a kind of hybrid; and according as he has in him more of the seed of God, or of the seed of the Devil, is life or damnation his portion hereafter, "Damnation would be impossible," says Reeve, "if all sprang from one root." *

These two seeds, or "two sparks of fire," in man, as they may be called, † are readily distinguished by the instructed eye, as Reason and Faith. Reason is the seed or nature of the Devil; Faith the seed or nature of God. Reason is a searching, curious, speculative, hungering, supplicating impulse, ever feeding on mere notions and imaginations, except where, as in the case of the Angels, it is allowed to feed on the overflowings of the wisdom of God; Faith is a calm, peaceful, assured and blissful principle, which may or may not, according to a man's opportunities, be accompanied and strengthened by right opinions on matters of religion. ‡

There is thus no Devil except the persons of the damned. Similarly, there is no God but the person of the man Christ Jesus. For in the Virgin, God, who from all eternity was a spiritual being in the shape of a man, dissolved himself into seed, (every spiritual being is capable of this dissolution into seed,) and thus did not simply become incarnate, but was literally converted into the flesh of Jesus. Hence God died when Christ died. So completely were the attributes of

* *Divine Looking Glass*, *ut supra*, p. 11.

† *Joyful News from Heaven*, etc., 2nd edition, 1751-3, p. 13.

‡ " Could we eliminate only

This vile hungering impulse, this demon within us of craving,
Life were beatitude, living a perfect divine satisfaction."

—A. H. Clough, *Amours de Voyage*, canto iii.

Godhead in abeyance, while Jesus lived on earth, that Moses and Elias (with whom Enoch is sometimes associated) remained above as representatives of God, "trustees," as an early Muggletonian puts it, of the divine power.* By them was John the Baptist commissioned; to them Christ prayed; through them was the universe governed.

Accordingly the references to God's personality are of the most precise and physical kind, exceeding even the rigid Scripturalism of John Milton,† or the refined realism of Swedenborg. Indeed I know not where to find a parallel to the Muggletonian boldness on this subject, unless in the quarter from which the following rude lines come:—

The God that others worship is not the God for me;
He has no parts nor body, and cannot hear nor see;
But I've a God that reigns above —
A God of power, and of love—
A God of revelation—Oh, that's the God for me!
Oh, that's the God for me!
Oh, that's the God for me!

"A Church without a Prophet is not the Church for me,
It has no head to lead it; in it I would not be:
But I've a Church not made by man,
Cut from the mountain without hand;
A Church with gifts and blessings—Oh, that's the Church for me.
Oh, that's," etc.‡

On grounds of social order Muggletonians would sternly repudiate the smallest sympathy with Latter Day Saints; but this only makes the coincidence all the more remarkable.

The main items of Muggletonian faith are summed up

* "He spake the decree, and left the virtue of his word in the hands of trustees in the heavens above."—*The Harmony of the Three Commissions, or None but Christ*, by Thomas Tomkinson, 2nd edition, Deal, 1822, p. 109.

† *De Doctrinâ Christianâ*, lib. i., cap. 2, published 1825.

‡ *Sacred Hymns, and Spiritual Songs, for the Church of Jesus Christ of Latter Day Saints*, 12th edition, Liverpool, 1863, p. 349.

in what are called the Six Principles, an expansion of the Two Prime Mysteries. We may condense them thus :

1. There is no God but the glorified man Christ Jesus.
2. There is no Devil but the unclean Reason of men.
3. Heaven is an infinite abode of light, above and beyond the stars.
4. The place of Hell will be this earth, when sun and moon and stars are extinguished.
5. Angels are the only beings of pure Reason.
6. The soul dies with the body, and will be raised with it.

While thus they gave to many doctrines an aspect which will strike most educated minds as being strangely crass and crude, — an aspect which will forcibly recal to the student of Church history many characteristics of the Bogomilian heresy, as it appeared in Bulgaria during the eleventh and twelfth centuries, — it is nevertheless certain that the Muggletonians were in advance of the religious world of their day in some other points.

In particular, they advocated the most absolute toleration and liberty of opinion; did space permit, some noble passages might be quoted from their writings in assertion and defence of the lawfulness of free speech and action in matters of conscience and religion. Nor with the Muggletonians did liberty mean licence. Their system is pervaded throughout by a truly English common sense and love of law and order. It exhibits, on its intellectual side, a strong recoil from the unenglish mysticism of Behmen; and in its sound, sober, ethical character it establishes a solid protest against the equally unenglish laxity and extravagance into which Ranters and Familists, and even Quakers, sometimes insensibly glided, and sometimes avowedly fell.

What strikes one more perhaps than anything else, in examining this system, is its singular union of opinions which

seem diametrically opposed to each other. It is one of the most purely spiritual, and at the same time one of the most rigidly dogmatic faiths on record. It deals largely with the most mysterious parts of nature and theology; yet it is always matter-of-fact, and eager to get rid of superstitions. Its followers contend with the utmost fervour for the use and virtue of the Spirit of the Scripture, in contradistinction to the nullity of the bare letter; yet to this day they believe and maintain, on the authority of the letter of Scripture, that the sun rolls round the earth in a day's journey, and that the whole Newtonian system of Astronomy is a series of wanton blunders. An unfriendly critic of the Muggletonian faith might complain that there is a stupid and almost wooden reality about its doctrines; but no one, I imagine, could come soul to soul with John Reeve and not confess the purity and tenderness of mind which may dwell in its piety.

In this slight sketch I have by no means exhausted the details of the Muggletonian system, or entered upon the history of the Muggletonian Sect. I have simply attempted to fulfil the promise of giving some account of the circumstances which led to its origination. The literature and philosophy of the Muggletonians may be thought perhaps to deserve further enquiry and study; and I may take a future opportunity of presenting to the members of the Literary and Philosophical Society the result of enlarged investigations into the writings and fortunes of this singular people.

There are many interesting personages connected with them besides the two founders of the faith. Laurence Claxton, who began life as a Clergyman of the Church of England, Thomas Tomkinson, the Staffordshire yeoman, John Saddington, and James Birch, the leader of the Birchites, are worth, at least, a passing notice.

At present I will anticipate what I may recur to here-

after, only by recording that John Reeve died, after long sickness, in 1658. "Frances," said he to one of the three sisters who watched at his bedside, "close up mine eyes, lest mine enemies say, I died a staring prophet."

Lodowicke Muggleton, a man of harder mould, lived longer, and weathered many storms. Not till his eighty-ninth year was he gathered to his fathers, on the 14th March, 1698.

His tomb in Bethlehem New Churchyard is said to have once borne the following inscription; but the tomb and the grave-yard in which it stood have long since been swept away, and a railway station now rises, in the heart of London, close to where his bones were laid :

"Whilst mausoleums and large inscriptions give
 Might, splendour; and past death make potents live;
 It is enough briefly to write thy name:
 Succeeding times by that shall read thy fame.
 Thy deeds, thy Acts around the globe resound;
 No foreign soil where MUGGLETON's not found."

THIRTEENTH AND LAST ORDINARY MEETING

ROYAL INSTITUTION, 19th April, 1869.

REV. C. D. GINSBURG, LL. D., PRESIDENT, in the
Chair.

Ladies were invited to attend this Meeting.

In accordance with the new law recently enacted by the Society, the Members present proceeded to elect a new President, when Dr. Nevins, one of the Vice-presidents, was chosen, almost unanimously.

Mr. T. J. Moore brought before the Society the following recent additions to the Free Public Museum :— A large brain coral, of the genus *Meandrina*, presented by Captain Watson, ship "David Malcomson," by whom it was brought from Annesley Bay ; and two fossil mammalian bones (right humerus and portion of scapular), found embedded in the banks of the River Quebracho, a tributary of the River Plate, by Mr. Alfred Hart, who presented them to the Museum, and the relations of which had yet to be determined, as they evidently differed from the *Megatherium*, to which they had been supposed to belong.

The President-elect then took the Chair, and the following paper was read :

RESEARCHES INTO THE MASSORAH, AND THE RESULTS OF SOME NEWLY DISCOVERED MANUSCRIPTS,

BY THE REV. C. D. GINSBURG, LL.D.

CHAPTER I.

The study of the Massorah necessary to a recension of the Hebrew Text. Neglect of it on the part of Biblical critics. Definition of Massorah and Massoretic text. Import, Form, and Development of the Massorah. Number of letters in the Bible. Suspended Letters. Peculiarly Pointed Letters. The Inverted Letters. The antiquity of this part of the Massorah.

FOR the last seven years I have been engaged in a critical recension of the text of the Hebrew Scriptures, attempting to do, in a humble way, that for the Old Testament which Griesbach, Scholz, Lachmann, and Tischendorff in Germany and Bloomfield, Alford, and Tregelles in England, have done for the New Testament. Soon after embarking in this prodigious task, I found that it was absolutely necessary, first of all, to master and work out the *Massorah*. Now, though almost every Introduction to the Bible speaks about the Massorah, and although the *textus receptus* of the Hebrew Scriptures is technically called "the MASSORETIC Text," yet I venture to say, without intending to give offence, but without fear of contradiction, that with the exception of a few Jews, and one or two Christians, all those who have edited the Hebrew text, or written upon its Massorah in their respective Introductions, could neither master nor describe the entire domain of this ancient critical apparatus.

You will understand this better after I have described

succinctly the origin, import, and development of the Massorah, as well as the manner in which it has been written and transmitted. Perhaps it will be better that I, at the outset, explain the meaning of the name itself.

The expression, *Massorah*, מְסֹרָה, *Massoreth*, מְסֹרֶת, or *Massortha*, מְסֹרְתָא, by which this critical apparatus is alternately called (from מָסַר, *to deliver, to transmit*), literally means *tradition* generally. It is so used in the Chaldee versions of the Bible; in the Talmud, and in the Midrashim. Afterwards, however, it became to denote the *traditional pronunciation of the words in the text*.¹ Such an authoritative and traditional fixing of the pronunciation is of the

¹ In Biblical Hebrew the root מָסַר = מָשַׁר occurs only twice, and denotes, *to separate, to separate oneself*, in the sense of falling away (Num. xxxi. 16), and in the Niphal, *to be separated*, in the sense of being set apart or numbered (Num. xxxi. 5). In post Biblical Hebrew, however, as well as in Aramaic, it is used almost exclusively in the developed sense of separating, in order to hand over, i. e. *transmitting, delivering*. Thus, "Moses received the Law (וּמִסְרָה לְיִחוּשָׁע) and delivered it to Joshua." (*Aboth* i. 1), and the Chaldee of Onkelos, on Gen. xxxix. 8, renders the phrase "he committed to my hand" זָהָן בְּיָדִי, "*delivered (מָסַר) into my hand*." Hence, the noun מְסֹרָה (according to the analogy of בְּגִידָה Jerem. iii. 7), *tradition, traditionally fixed text, with the grammatico-critical remarks thereon*. It is to be remarked that this form of the noun does not occur in the Talmud, but מְסֹרֶת or מְסֹרָה (*Mishna Aboth* iii. 13), and that it has evidently been adopted in conformity to the Biblical form מְסֹרָה (Ezek. xx. 27), which, indeed, Rashi, and the Authorised Version (Marginal reading), take to denote *tradition*. Others, again, not only take the Biblical word מְסֹרָה as a contraction of מְסֹרֶת (from מָסַר *to bind*), but maintain that the Massoretic term is also from the same root, and denotes *band, hedge, fence*, in harmony with the statement in the Mishna, that "*the Massorah is a fence for the Law*" (מְסֹרָה סִיג לַחֹרֶה) (*Aboth* iii. 13). But whatever may be said in favour of deriving the Biblical term from this root, it can certainly not be sustained with regard to this classical expression. The term מְסֹרֶתָא, which very frequently occurs in the printed Massorah itself, is the Chaldee form; in addition to its ordinary signification, it is also used in Massoretic language when a word is repeated once or twice with another word intervening. Thus, on וְאִפְּהָ לֶפָר וְאִפְּהָ (Ezek. xlv. 7) the Massorah remarks, חֲדָ מִן דְּרַ"שׁ מְסֹרֶתָא מִכָּא וּמְסֹרֶתָא מִכָּא וּמִלָּא בְּאַמְצַע, *one of eight verses, beginning with a word which is repeated, with another word intervening between them*, and דְּבָרִים מְסֹרֶתָא (Zech. i. 13); on which the Massorah remarks, חֲדָ מִסּוּקִים מְסֹרֶתָא מִכָּא וּמִכָּא וּלָא, *eight verses, wherein the same word is repeated twice without Vav conjunctive, and with one word intervening*. Comp. also *Massorah Finalis*, letter Vav, Rubrics 1753, 1754, 1755.

utmost importance, and was called forth at the earliest period of the Jewish commonwealth. For be it remembered that the Hebrew Scriptures were originally without vowel points, and that the same word somewhat differently pronounced yields several meanings. Hence, when the prescriptions of the Law became the legal guide for practice, the exact and definite pronunciation of the vowelless words, which is tantamount to the precise meaning, had to be fixed.

Thus, for instance, the law laid down in Exod. xxiii. 19, when read without points, may either mean "thou shalt not seethe a kid in its mother's *milk*," or it may denote "thou shalt not seethe a kid in its mother's *fat*," as it entirely depends upon the pointing of the same word, בָּחֵלֶב, whether it is made בָּחֵלֶב (*in the milk*), or בָּחֵלֶב (*in the fat*). Again, the injunction in Levit. xii. 5, without points, may either mean, "if she bear a maid-child, then she shall be unclean *two weeks*," or, "if she bear a maid-child she shall be unclean *seventy days*," inasmuch as it entirely depends whether the word שְׁבַעִים is pronounced שְׁבַעִים (*two weeks*), or שִׁבְעִים (*seventy*).

To avoid the serious consequence which might arise from such divergency, the ancient scribes, lawyers, and spiritual guides of the people, upon whom it was incumbent to propound the import and enforce the observance of the divine Law, fixed the pronunciation, and with it the meaning of these and all other words. But as the present vowel-points or signs, which indicate the pronunciation of each word, did not then exist, the pronunciation fixed by the exponents of the Law were for centuries transmitted in the academies orally. Hence the name *Massorah*, i. e., *oral transmission, tradition, traditional pronunciation*.

Apart from fixing the pronunciation, however, they extended their attention in the course of time to all the phenomena of the text, such as to peculiarities of cali-

graphy and orthography, to grammar and exegesis, various readings, etc., etc. Now the whole of this critical apparatus, which developed itself during centuries of labour, retains the name *Massorah*, which was originally given to a part of it. So that Massoretic text denotes a recension of the Hebrew Scriptures, according to the originally transmitted, afterwards extended, and now written-down remarks of the doctors of the Law, who are called *Massorites*, because they devoted themselves to the annotation and rubrication of these textual peculiarities.

As to the contents of the *Massorah*, it is not too much to say that it embraces all the phenomena of the text, from the simple letter to the peculiarities of each book. Thus, (i.) it gives the number of times each letter of the entire alphabet occurs throughout the Bible. (ii.) It registers the Majuscular Letters, the Minuscular Letters, the Inverted Letters, the Suspended Letters, the Peculiarly Pointed Letters. (iii.) It enumerates anomalous forms of words. (iv.) It marks ἀπαξ λεγόμενα, or words which are unique. (v.) It describes how many times certain words and phrases occur in a particular book, or throughout the Scriptures, and how many verses each book has. (vi.) It notes parallel passages. (vii.) It rubricates homonyms. (viii.) It registers the variations in words, and in construction of the same enactment or statement repeated or recorded in different parts of the Bible. (ix.) It gives various readings. (x.) It specifies the alterations in the text designedly made by the scribes. (xi.) It catalogues conjectural readings, and thousands of other things.

The form in which these phenomena are recorded varies, according to the magnitude and import of the peculiarities. All the anomalies which are of the same kind are generally catalogued in one register. And if the words coming under one Rubric are numerous, or will admit of it, they are ranged alphabetically ; and if they are too few, or not of

an alphabetical nature, they are enumerated according to the order of the books in the Bible, with different superscriptions, stating the special import of the Rubric, and generally also specifying the number of the words or phrases registered in the Rubric. When the contents of the Rubric are alphabetically arranged, the superscription states it; and if the alphabet is imperfect,—that is, if two or three letters are not represented,—it is, as a rule, likewise expressed in the heading of the List. When the words are not alphabetically ranged, and if the number of the Rubric exceeds ten instances, it is either headed (שטת מן) “*A List of so many,*” etc., or simply (כ' מל'ן יחידא'ין) “*Twenty words are unique,*” etc. A few illustrations will explain both the import and form of the Massorah.

The letters.—The Massoretic Poem on the letters of the Bible gives the following computation of the number of times each letter occurs throughout the Bible.

א Aleph occurs 42,377 times.	ם Final Mem occurs 24,973 times.
ב Beth „ 38,218 „	נ Nun „ 32,977 „
ג Gimel „ 29,537 „	ן Final Nun „ 8,719 „
ד Daleth „ 32,530 „	ס Samech „ 13,580 „
ה He „ 47,754 „	ע Ayin „ 20,175 „
ו Vav „ 76,922 „	פ Pe „ 20,750 „
ז Zain „ 22,867 „	ף Final Pe „ 1,975 „
ח Cheth „ 23,447 „	צ Tzadi „ 16,950 „
ט Theth „ 11,052 „	ץ Final Tzadi „ 4,872 „
י Jod „ 66,420 „	ק Koph „ 22,972 „
כ Caph „ 37,272 „	ר Resh „ 22,147 „
ך Final Caph 10,981 „	ש Shin „ 32,148 „
ל Lamed „ 41,517 „	ת Tau with Dagesh 36,140 „
מ Mem „ 52,805 „	ת Tau without „ 23,203 „

Sum total of all the letters in the Bible, 815,280

Moreover, the *Massorah* on Levit. xi. 42 remarks that the letter *Vav* in the word נחון (Levit. xi. 42) is the middle letter in the Pentateuch, and on Ps. lxxx. 14, that the letter *Ayin* in כיער (Ps. lxxx. 14) is the middle letter in the Psalms.

On Gen. i. 1, and 1 Chron. i. 1, it gives an alphabetical list of those words throughout the Bible which respectively have a larger letter; whilst, on Levit. i. 1, it gives an alphabetical list of the words which, on the contrary, have severally a smaller letter than the rest of the text. On Numb. iii. 39, it gives fifteen words in the Bible which have letters with extraordinary signs or marks. On Jud. xviii. 30, and Job xxxviii. 14, it enumerates four words which have a suspended letter. On Numb. x. 35, it registers nine places in which an inverted *Nun* occurs. On Isa. ix. 6, it is remarked that לִסְרָבָה has a final *Mem* in the middle of the word.

To many this portion of the Massorah at least will appear trivial, and unworthy of serious minds. But be it remembered that all these peculiarities are to be found in the ordinary text, and that even the Bible Society, which boasts of publishing the Scriptures without note or comment, diffuses and perpetuates the Hebrew text with these apparently fantastic phenomena. Hence, if there were no other reason, this fact alone demands a classification, under separate heads, of these peculiarities, so that when the student meets with a word which exhibits so strange an appearance, he may at once ascertain how many of, and where, these anomalies are to be found in the text.

But apart from these considerations, the apparently fantastic forms, and the seemingly arbitrary position of the letters, in fact, exhibit, in a kind of kleptography, the earliest results of textual criticisms and collation which have been greatly neglected by Biblical scholars, and are therefore very difficult to be deciphered. The numbering of the letters is of course an attempt to guard the Sacred Scriptures against losing a single yod or tittle. But though this zeal is more to be admired than imitated, and though the attempt has failed in its object, yet it explains some of the phenomena

of the text. Thus, for instance, the fact that the *Vav* in נחון (Levit. xi. 42,) is the middle letter in the entire Pentateuch, shows why it is written larger than the rest of the letters, and why it is found in the list of the *Majuscular Letters*. The same reason explains the phenomenon in מיער (Ps. lxxx. 14), which has a suspended letter, because the *Ayin* is the middle letter in the Psalter. Indeed, it ought properly to be a majuscular letter, and should not be among the list of suspended letters. The three words, having suspended letters, which really constitute this Rubric, exhibit various readings. Thus the suspended *Nun* in מנשה, *Manasseh* (Judges xviii. 30), indicates that it is wanted in MSS., and that it should be read משה, *Moses*, as in 1 Chron. xxvi. 24, which is really the reading of the Vulgate, and in the Syriac Hexapla of Judges and Ruth, edited by Dr. Rordam, Copenhagen, 1861; whilst the suspended *Ayin*, in רשעים, in the two instances (Job xxxviii. 13 and 15) shows that it is likewise to be dropped, and that the word in question should be read without it, *i. e.*, ראשים = ראשים, in the double sense of *chiefs* and *poor*.²

The same is the case with the letters which have extraordinary marks in fifteen passages of the Bible. To make the explanation more intelligible, we subjoin the list.

וּבֵינֵיהֶם, and between the	Gen. xvi. 5.	וְעֶשְׂרִית, and a tenth	- Num. xxix. 15.
וּבְקִמָּתָהּ, and her rising		לָנוּ וּלְבָנֵינוּ עַד, to us and	
up	- - - - - „ xix. 33.	to our children	
עַד, unto him	- - - „ xviii. 9.	until	- - - Deut. xxix. 28.
וַיִּשָּׁק, and he kissed		וָיָא, he went out	- 2 Sam. xix. 20.
him	- - - - - „ xxxiii. 4.	הַהֵיכָל, the temple	- Ezek. xl. 20.
אֵת, accusative	- - - „ xxxvii. 12.	מִהַקְצֵעוֹת, corners	- „ xlvi. 22.
וְאַהֲרֹן, and Aaron	- Num. iii. 39.	הֵמָּה, they	- Isa. xlv. 9.
רָחֹק, far	- - - - - „ ix. 10.	לְרֵא, except	- Ps. xxvii. 13.
אֲשֶׁר, which	- - - - - „ xxi. 30.		

² This fact is preserved in the Talmud (*Sanhedrin* 103 b) אמר רבי שמעון

The mysterious marks over these expressions are nothing else, and nothing less, than the signs which the ancient scribes put over spurious letters or words, to indicate that the letter or expression thus marked is not to be regarded. They preferred this mode of cancelling, to striking out altogether, because it did not deface the appearance of the Codex. That this is really the case, will be seen from an analysis of the words in question. Thus the second *Jod* in בִּינֶיךָ, *between thee*, is marked, because בֵּין *between*; with the singular suffix, it is always treated as a singular, i. e., בִּינֶיךָ in pause בִּינֶיךָ. (Comp. Gen. xviii. 9, xix. 33, xxxiii. 4, xxxvii. 12, Num. iii. 39, ix. 10, xxi. 30, xxix. 15, Deut. xxix. 28.) The second *Vav* in וּבָקוּמָה, *and her rising up*, is marked, because in other Codices it is defective, as in verse 35 of the same chapter. אֵלָיו, *to him*, is marked because many Codices had לוֹ, and in some the word was absent altogether. For the same reason the whole words in Gen. xxxiii. 4, in xxxviii. 12, and in Num. iii. 39, are marked, not being found in the Codices. In Num. ix. 10, either the *He* alone is wanting, because דֶּרֶךְ, *way*, is frequently masculine, or the whole word may have been wanting, as in verse 13 of the same chapter. In Num. xxi. 30, the *Resh* is marked, because some Codices had אֵשׁ, *fire*, which is indicated in the Talmudic explanation of this passage, (*Baba Bathra* 79 a) and is actually to be found in the Septuagint (πῦρ ἐπὶ Μωάβ), etc. In Num. xxix. 15 the second *Vav* in וְעֶשְׂרִין, *and a tenth*, is marked, because in

בן לקיש. מאי דכתיב וימנע מרשעים אורם וזרוע רמה חשברי מפני מה ע"ז של רשעים תלויה. כוין שנעשה אדם רש מלמטה נעשה רש מלמעלה ולא נכתבזה כלל. ר' יוחני ור' אישור חד אמר מפני כבודו של דוד וחד אמר משום כבודו של נחמיה בן הכליה
R. Simon b. Lakish asked, Why has מרשעים (Job xxxviii. 15) a suspended Ayin?
[Reply] Because, when man becomes a chief upon earth, he becomes poor in heaven. But why then is it [i. e., the Ayin] written at all? R. Jochanan says, Because not to offend the dignity of David; whilst R. Eliezer said, Because not to offend the dignity of Nehemiah, son of Hechaliah. Comp. Maimonides, on Aboth i. 8; Jacob b. Asher, Baal Ha-Turim on Numb. i. 50; Geiger, Urschrift, p. 258.

many Codices it is defective; whilst the words marked in Deut. xxix. 28) show that ancient Codices had here a different reading. The marks on יִצָּר (2 Sam. xix. 20), show that it is a euphemism for גִּלָּה, as the Chaldee version translates it. הַהִיכָל, *the temple*, which is marked at the end of verse 20 (Ezek. xli.), and is repeated again at the beginning of verse 21 is also recognised by the Septuagint, Syriac, Vulgate, &c., as spurious, and hence is once omitted; and there can be no doubt that מִהַקְצֵעוֹת, *corners*, (*Ibid.* xli. 22) is wrong. That the pleonastic הֵפִיחַ, *they* (Isa. xli. 9), indicates a change in the text, is also evident, from the fact that the Septuagint and Syriac deviate from the *textus receptus*; whilst the word לִנְלָא *except* (Ps. xxvii. 13) is omitted in the Septuagint, Syriac, Vulgate, &c.*

The strange appearance of inverted *Nuns* in the nine passages of the Bible, also exhibits the earliest efforts at textual criticism. They are simply used as brackets, to show that the passages enclosed in them are out of place. Thus the inverted *Nuns* in Num. x. 35, 36, as the *Siphri* on the passage, and the Talmud (*Sabbath* 115 b), show that the passage is out of place and belongs elsewhere, and that the time will come when it will be restored to its proper place. The uncertainty of the position of these two verses is moreover to be seen from the fact, that the Septuagint places verses 35 and 36 before 34. The idea, however, that dislocations and transpositions should be found in the Bible, was not at all agreeable to those Rabbins who looked

* That the extraordinary signs are intended to indicate spurious words has already been recognised in *Aboth d. R. Nathan*, cap. xxxiv., where the list of these passages is given, and the following remark is made. כִּי אָמַר עֲזָרָא אִם יָבֵא אֱלִיהוּ וְיֹאמַר לִי מִסְנֵי מַה כָּתַבְתָּ כֵּן: אֹמֵר אֲנִי לוֹ כִּי כָּרַחְתִּי עֲלֵיהֶן וְאֵם אֹמֵר לִי יֵשׁוּ כָּתַבְתָּ אֶעֱבֹר נִקְרָא מִעֲלֵיהֶן. *Ezra remarked thus, If Elias come [he is supposed to settle all doubts], and ask me, Why hast thou written thus [seeing that it is incorrect]? I will answer him, I have already put points over them [to indicate the erroneous readings]. But if he should say, Thou hast written correctly, then I shall remove the points from these words.* Comp. also Geiger, *Lesestücke aus der Mischna*, p. 86, etc.; *Urschrift*, etc. p. 257.

upon the Scriptures as miraculously stereotyped by Ezra; and upon every mark as embodying a recondite meaning, rather than the indication of a textual defect or clerical error. Hence these inverted letters, or brackets, like the extraordinary points, were misinterpreted. They were taken to show that the two verses which they enclose form *a separate book*, so that the single book of Numbers was converted into three books; book 1 consisting of chap. i. 1—x. 34; book 2, of two verses, *i. e.* chap. x. 35, 36; and book 3, of chap. xi. 1—xxxvi. 13. Indeed in the Talmud (*Sabbath* 115 *b*), and in some of the Midrashim, the Pentateuch is actually denominated כפרי תורה = ἑπτὰ τεύχος, *Heptateuch*. The other inverted Nuns, which occur in Ps. cvii. 23—28 and 40, 41, indicate the same thing. They show that the passage describing the sea voyages (vv. 23—28) was originally inserted before verse 40.

That this is the design of the inverted Nuns is moreover evident, from the fact that it was known to the later scribes, and acted upon by them, after the far fetched interpretations of some of the Talmudists had obtained currency. In some of the MSS. and printed editions of the Bible, such an inverted Nun is to be found at the end of Gen. xi. The reason for this cannot be doubted. As the text is at present, there is an irreconcilable difficulty. In Gen. xi. 26, we read that Terah lived 70 years and begat Abram; and in xi. 31, 32, that he went with his family to Haran, where he died, at the age of 205. Now in xii. 1 (comp. with Acts vii. 4) we are told that, *after* Terah's death, God commanded him to leave Haran and go to Canaan, and that Abram was then 75 years old. Accordingly Terah could only then have been 145, and must have lived 60 years in Haran after Abram's departure. To obviate this difficulty, an inverted Nun is placed at the end of chap. xi. to show that the death of Terah, which is recorded in xi. 32, does not precede chronologically chap. xii. 1, where the

call of Abraham is recorded, but must follow it, and that there is simply a transposition.

Before leaving this part of the Massorah, it is necessary to remark that the different Rubrics discussed therein are of very ancient date. They form the topic for discussion and speculations in the earliest post-Biblical Hebrew writings, and even in these early documents their antiquity is already acknowledged. Thus the numbering of the letters is adverted to in the Talmud (*Kiddushin* 30 a);⁴ the Suspended letters are mentioned in both the Talmuds (*Jerusalem Berachoth* ix. 1; *Jerusalem Sanhedrin* i. 4; *Baba Bathra*, 109 b; *Tosephta Sanhedrin* cap. xiv.); and in the Midrashim (*Va yikra Rabba*, cap. xiii.; *Midrashim* on Psalm lxxx. 14; *Song of Songs* iii. 4; *Aboth d' R. Nathan*, cap. xxxiv.) The Peculiarly Pointed Letters are quoted in the Mishna (*Pessachim* ix. 2); the Talmud (*Nazir* 23 a; *Baba Mezia* 87 a; *Sanhedrin* 43 b; *Horajoth* 10 b; *Menachoth* 87 b; *Becho-roth* 4 a); and in the Midrashim (*Midrash Rabboth*, on the respective passages; *Siphre* on Numb. ix. 10). The Inverted Letters are referred to in *Siphre* on Numb. x. 35, 36; *Sabbath* 115 b, and the Midrashim on the respective passages.

⁴ Though the Massoretic Poem, giving the number of times each letter occurs throughout the Bible, was written towards the end of the twelfth century (Comp. *Massoreth Ha-Massoreth*, p. 269, etc., ed. Ginsburg, where it is printed with an English commentary), yet, from the above quoted passage, it is evident, that as early as the fourth century of the Christian era, the letters were already counted and registered. Indeed the Talmud, *ut supra*, will have it that the title, *Sopherim* (סופרים), was given to the ancient doctors of the Law, because they numbered every letter of the Scriptures (לפיכך נקראו ראשונים סופרים שהיו סופרים כל האותיות שבחוקה) thus deriving the word סופר from ספר, to count, to number, and not from to write.

CHAPTER II.

Number of Books in the Hebrew Scriptures, according to the Palestinians, Babylonians, Josephus, Melito, Origen, St. Jerome, the Talmud, the Midrashim, and the Massorah. The Threefold Division of the Books, and the Designation of the respective Groups. The Massoretic Groupings. Diversity of Opinion about the Sequence of the Books. Tabulated Order according to the Talmud, St. Jerome, the Massorah, the Spanish MSS., the German and French Codices, and the Vienna Codex. The Division of the Pentateuch into Six Hundred and Sixty Nine Open and Closed Sections. Table of these Sections. Their Origin and Import. Their Antiquity. How they are indicated in the MSS. and Printed Text. The Division of the Text to secure Pericopes for the Semi-Sabbatical Cycle, and for the Triennial Cycle. Table of the Triennial Divisions. The Antiquity of the respective Liturgical Divisions. The Pericopal Division of the Prophets and Hagiographa. The Peculiar Division of the Psalms. Breaks in the Middle of Verses. The Division of the Pentateuch to obtain an Annual Cycle of Hebdomadal Lessons. Table of the Annual Pericopes. The Breaking up of the Text into Verses. Table, exhibiting the Number of Verses and the Middle Verse of each Book. List of Chapters and Verses in the Authorised Version.

In passing on from the Letters to the other external peculiarities which arrest the eye when looking on any page of the Hebrew text, we not only meet with the same scrupulous care on the part of the Massorah in the registering of each section and break, but discover special reasons for every such division. Before, however, we enter upon the discussion of the more minute divisions in each book, it is necessary to describe the number, classification, and order of the entire Old Testament, according to the Massorah.

The Number of Books.—The ancient Hebrews had two modes of numbering the books of the Bible. The Palestinians divided the Scriptures into twenty-two books, in order to obtain the same number as the letters in the Hebrew alphabet. The requisite number was acquired by the following combination: 1-5, the books of Moses; 6, Joshua; 7,

Judges—Ruth;¹ 8, Samuel; 9, Kings; 10, Chronicles; 11, Ezra—Nehemiah; 12, Esther; 13, Isaiah; 14, Jeremiah—Lamentations; 15, Ezekiel; 16, Daniel; 17, the Minor Prophets; 18, Job; 19, the Psalms; 20, Proverbs; 21, Ecclesiastes, and 22, the Song of Songs. The Babylonians, on the other hand, divided the Bible into twenty-four books, answering to the twenty-four letters of the Greek alphabet, for which reason the Iliad and Odyssey are also respectively divided into twenty-four books. The two additional books to make up the two letters which the Greek alphabet has more than the Hebrew, were obtained by separating Ruth from Judges, and Lamentations from Jeremiah. That the division into twenty-two books is the Palestinian, and hence the older of the two, is evident from the following facts. 1. This number is mentioned by Josephus (*Contra Apion.*, i. 8). 2. Melito, bishop of Sardis, who travelled to Palestine in the second century, in order to ascertain on the spot which were the sacred books of the Hebrews, gives this numerical division (Eusebius, *Hist. Eccles.* iv. 26). 3. Origen, who divides the Hebrew canon into twenty-two books, appeals to the tradition of the Jews in support of his numbering (Eusebius, *ibid.* iv. 25). And 4. St. Jerome, who adopted the general arrangement of the Palestinian Jews in his days, gives this number (*Prologus Galeatus*). Both Origen and St. Jerome distinctly declare that this division was made in accordance with the letters of the Hebrew alphabet. Indeed the latter tells us that the five final letters were also represented in the symbolisation of the books of Scripture. “The Hebrews,” he remarks, “have five double letters, viz., *Caph, Mem, Nun, Pe, and Tzadi*, and hence there are five books which

¹ Hence Ruth was sometimes actually called the book of Judges ספר ששם השפטים from the initial words with which it begins. This name is given to it in Codex of the British Museum (No. 5773, Harl.), and in a Massorah of a Spanish Codex of the Bible, No. 3, by Kennicott. Comp. Bruns, *Ad Kennicotti Dissert. General.*, pp. 18, 19.

are double, viz., Samuel, Kings, Chronicles, Ezra, and Jeremiah, which contains in it Lamentations.”² Still, the Alexandrian and Babylonian division into twenty-four books, was already known and adopted by some in Palestine in St. Jerome’s time, and like many other variations between the Easterns and Westerns, the Babylonian usage superseded the Palestinian, and is adopted in the Talmud, the Midrashim, and the Massorah. Hence the technical designation, עשרים וארבע, *four and twenty*, for the Old Testament.³

The Classification.—The twenty-four sacred books are divided into three classes, viz., the Law, the Prophets, and the Hagiographa. Like the numbering of the books, this threefold division first obtained in Palestine. Hence its Hebrew name תורה נביאים וכתובים, which is of frequent occurrence in the Talmudic literature (*Baba Bathra* 14 *b*), and which is adopted in the Massorah, both in the full title and in the abbreviation ת"נכ (comp. Massorah on Gen. iii. 11. x. 18.) It is to be remarked that the Massorah frequently calls the first division by the Chaldee name אורייתא, *Law*, which it abbreviates into אור, or simply א' (comp. Massorah on Gen. i. 1, ii. 22, vi. 5, 6, 16, xii. 14, 20, xiv. 9, etc.) Hence the abbreviation of all the three divisions, אורייתא נביאים וכתובים = א"נך (comp. Massorah on Gen. i. 12, ii. 20, iii. 16, iv. 4, vi. 2, x. 13, xiv. 20). The second class, *i. e.*, the Prophets, are subdivided into two minor classes, respectively denominated the *Earlier Prophets* (נביאים ראשונים) comprising Joshua, Judges, Samuel, and Kings; and the *Later Prophets* (נביאים אחרונים), embracing Isaiah, Jeremiah,

² Porro quinque litteræ duplices apud Hebræos sunt, caph, mem, nun, phe, sade. Aliter enim scribitur per has principia, medietatesque verborum, aliter fines: unde et quinque à plerisque libri duplices aestimantur, Samuel, Melachim, Dibre haïamim, Ezdras, Hieremias cum Kinoh id est lamentationibus suis. Præfatio cvi. in *Librum Regnum*, vol. i. col. 1023, ed. Paris, 1609.

³ Or the fuller title, עשרים וארבע כתבי קדש, *the four and twenty sacred books*, or simply עשרים וארבע ספרים, *the four and twenty books*.

Ezekiel, and the Minor Prophets. These two subdivisions the Massorah calls אשלמות קדמייתא and אשלמותא תנינא.⁴

The Greek-speaking Jews, who also adopted the triple division, had, up to the time of Christ, no technical expression for the third class, *i. e.*, the כְּתוּבִים, *Hagiographa*. Hence it is alternately designated τὰ λοιπὰ τῶν βιβλίων, τὰ ἄλλα πάτρια βιβλία, ψαλμοί and ὕμνοι.⁵ The terms, ψαλμοί and ὕμνοι, are identical, and have evidently been given to the third divi-

4 As אָשְׁלֵם (the Aphel of אשלם) denotes to complete, to make perfect, to make whole, to make peace, in Syriac and Arabic, to transmit, to deliver, great difficulty has been experienced in divining the reason why the Massorites call the Prophets אשלמה. Levita, the celebrated Massorite, honestly says, "I do not know why the Prophets are called so" (*Massoreth Ha-Massoreth*, p. 261, ed. Ginsburg). Joseph Eshve says קראים כך חנביאים בפי בעלי המסורת מפני שלימות עצמותם שהם קדושי עליין אם בעבור שמשלמים אחרים בדברים הנוכחתם. ואם בעבור ששמים שמום בן ישראל לאנדם שנשמים *the Prophets are named so by the Massorites because they are perfection, being the saints of the Most High, either because they perfect others by their words of reproof, or because they make peace between Israel and their Father in heaven.* Comp. Introduction to the *Mebin Chidoth*, section ii. Delitzsch takes the word אָשְׁלֵם to mean to complete, complete putting together, and hence the expression אשלמה to denote the complete collection, *corpus prophetarum*, which are subdivided into *corpus prius* and *posterius* (Comp. *Literaturblatt des Orients*, v. p. 471). Whilst Dr. Heinemann, who admits that the word אָשְׁלֵם denotes completing, perfecting, maintains that "the entire collection of the Prophetic writings are called אשלמה, because they complete the history of Israel as a people, as well as the doctrines of Moses, supplementing, as it were, the Pentateuch and concluding the Prophets. Hence, Malachi, the last Prophet, finishes with, "remember the Law of Moses my servant," and with the promise, "behold, I will send you Elijah" (*Ibid.*, pp. 572, 3). More probable, however, is Herzfeld's view that the word אשלמה either denotes tradition, and that it is simply the Aramaic for the well-known name קבלה, tradition, which is constantly given in the Mid-rashic and Talmudic literature to the Prophets, because they embody the unadulterated traditional history of the nation, and are, according to *Aboth* i. 1, the bearers of the traditions of Moses and the elders (comp. *Mechilta* 23 a, *Siphra* 100 b, *Jerusalem Kilajim* ix. 1, *Jerusalem Challa* i. 1, *Babylon Chagiga* 10 b, *Rosh Ha Shana* 7 a, 19 a, *Taanith* 15 a, *Baba Kama* 2 b, *Sopherim* xviii. 3). Or that אשלם is synonymous with השלם, to complete (comp. *Jerusalem Sanhedrin* i. 2), and as the *Haphtaroth* were taken from the Prophets, hence they obtained the name אשלמה; still the designation "the first" and "the second" אשלמה, renders it more acceptable to take אשלם as a denominative of אשלמה (*Geschichte des Volkes Israel* vol. ii. p. 18).

⁵ Comp. the Prologue to Ecclesiasticus; Luke xxiv. 44; Josephus, *contra Apion.*, i. 8. This, moreover, seems to be the reason for the designation, τὰ τοῦ Δαυὶδ, given to the כְּתוּבִים, in 2 Macc. ii. 13, and for the remark of Philo, who distinguishes νόμους καὶ λόγια θεοπισκέντητα διὰ προφητῶν καὶ ὕμνων καὶ τὰ ἄλλα οἷς ἐπιστήμη καὶ ἐνέβεια συναύξονται καὶ τελειοῦνται (*Opp.* ii. 475, ed. Mangey).

sion because in some Codices the Hagiographa commenced with the Psalms. The combinations of books in the third class which are to be found under abbreviated titles in the Massorah, such as תהלים איוב משלי = תה"ם, *Psalms, Job, and Proverbs*; דברי הימים דניאל עזרא = דר"ע, *Chronicles, Daniel, and Ezra*, or דתק"ע = דתק"ע, *Chronicles, Ecclesiastes, and Ezra*, are purely Massoretic groupings together of volumes in order to show that they either have, or have not, a certain peculiarity which forms the import of a Rubric. That books of this division only should be thus technically grouped together is somewhat significant.

The Order of the Books.—There is hardly any point in the whole range of Massoretic work, and in the description of the external form of the text, as transmitted to us in the various MSS. more puzzling than the order and sequence of the Biblical books. The ancient sages, it is true, have most minutely prescribed the order in which the volumes are to succeed each other. According to their rule, the sequence of the twenty-four books is as follows: 1–5, the Pentateuch; 6, Joshua; 7, Judges; 8, Samuel; 9, Kings; 10, Jeremiah; 11, Ezekiel; 12, Isaiah; 13, the Minor Prophets; 14, Ruth; 15, Psalms; 16, Job; 17, Proverbs; 18, Ecclesiastes; 19, Song of Songs; 20, Lamentations; 21, Daniel; 22, Esther; 23, Ezra–Nehemiah; and 24, Chronicles.⁶ It must be borne in mind that Samuel, Kings, Ezra with Nehemiah, and Chronicles, which are eight books in the modern editions of the Bible, are four books in the MSS. and in the early editions of the Hebrew Scriptures. They were first divided into two books each, by R. Isaac Nathan (1437–1445) in his Hebrew Concordance, and thus were introduced into the Scriptures, together with the division into chapters, by Felix

⁶ תנו רבנן סדרן של נביאים ירושע ושופטים שמואל ומלכים ירמיה ויהוואל ישעיה
ושנים עשר סדרן של כתובים רות וספר תהלים ואיוב ומשלי קהלת שיר השירים
וקינות דניאל ומנלה אסתר עזרא ודברי הימים Comp. *Baba Bathra* 14 b.

Pratensis (1516—1517).⁷ The Minor Prophets, which are called in the Massorah **תרי עשר**, or **תריסר**, *the twelve*, are also treated as one book, though the beginning and termination of each are indicated by a small or large vacant space in the MSS. The reason why these twelve Prophets are put together is, that owing to their smallness they might be lost if written separately.⁸

From the definite rule laid down by the sages it would naturally be concluded that the order of the books in the MSS. and in the Massoretic text should be uniform. But a greater diversity can hardly be conceived. Apart from the Septuagint and Vulgate, which have neither the threefold division nor follow the prescribed order, great variations are to be found in the MSS., in the Massorah, and in the early editions of the text. To render these differences intelligible, we subjoin the following table, in which, however, we do not include the first of the three divisions, since the Pentateuch uniformly occupies the same position and has the same sequence in the books.

⁷ It was Felix Pratensis, the editor of Bomberg's first Rabbinic Bible (Venice, 1516-17), and not R. Jacob b. Chajim Ibn Adonijah, the editor of the second Rabbinic Bible (Venice, 1524-25), as some suppose, who first introduced this division. At the end of what is now marked 1 Sam. xxxi. 13, Pratensis put the words **כאן מתחילים הלועזים ספר שני של שמואל ודומה שני של מלכים אצלם** *here the Romans begin the second book of Samuel, which is by them the second book of Kings*. These words form a complete line in the column, and as they are in the same size of type as the text, they are only distinguished from it by the absence of the vowel signs. The division between the first and second Kings, however, is simply indicated by an asterisk in the middle of a full line, referring to the margin, where it is remarked **אן מתחילים הלועזים ספר מלכי רביעי** *here the Romans begin the fourth book of Kings*. Between Ezra and Nehemiah, in the same line occupied by the termination of the one and the beginning of the other, is remarked, **ספר נחמיה** *the Book of Nehemiah*; whilst the second of Chronicles begins a new line; and the remark **ספר שני** *second Book*, is in the margin. All these books thus divided have separate chapterings, so that Pratensis was also the first who broke up the text into chapters.

⁸ This, according to Rashi, was done by Haggai, Zechariah, and Malachi **שנים עשר מתוך שהיו נבואותיהם קשנות לא כתבום הנביאים עצמם איש ספר ובאו חגי וזכריה ומלאכי וראו רוח הקדש מסתלק שהיו הם נביאים אחרונים ועמדו וכתבו נבואותיהם וצרכו נבואות קשנות עמם ועשאום ספר גדול שלא יאבדו מחמת קשנם** Comp. on *Baba Bathra* 15 a.

TABLE I.
ORDER OF THE PROPHETS AND HAGIOGRAPHIA.

I. THE JEWS, ACCORDING TO ST. JEROME.	II. THE TALMUD.	III. GERMAN AND FRENCH CODICES.
THE PROPHETS.		
^a EARLIER PROPHETS.		
Joshua.	Joshua.	Joshua.
Judges-Ruth.	Judges.	Judges.
Samuel.	Samuel.	Samuel.
Kings.	Kings.	Kings.
^b LATER PROPHETS.		
Isaiah.	Jeremiah.	Jeremiah.
Jeremiah-Lamen- tations.	Ezekiel.	Ezekiel.
Ezekiel.	Isaiah.	Isaiah.
^c MINOR PROPHETS.		
Hosea.	Hosea.	Hosea.
Joel.	Joel.	Joel.
Amos.	Amos.	Amos.
Obadiah.	Obadiah.	Obadiah.
Jonah.	Jonah.	Jonah.
Micah.	Micah.	Micah.
Nahum.	Nahum.	Nahum.
Habakkuk.	Habakkuk.	Habakkuk.
Zephaniah.	Zephaniah.	Zephaniah.
Haggai.	Haggai.	Haggai.
Zechariah.	Zechariah.	Zechariah.
Malachi.	Malachi.	Malachi.
HAGIOGRAPHIA.		
Job.	Ruth.	Psalms.
Psalms.	Psalms.	Proverbs.
Proverbs.	Job.	Job.
Ecclesiastes.	Proverbs.	Song of Songs.
Song of Songs.	Ecclesiastes.	Ruth.
Daniel.	Song of Songs.	Lamentations.
Chronicles.	Lamentations.	Ecclesiastes.
Ezra-Nehemiah.	Daniel.	Esther.
Esther.	Esther.	Daniel.
	Ezra-Nehemiah.	Ezra-Nehemiah.
	Chronicles.	Chronicles.

TABLE I.—*continued.*

ORDER OF THE PROPHETS AND HAGIOGRAPHHA.

IV. THE MASSORAH.	V. SPANISH AND ITALIAN CODICES.	VI. VIENNA CODEX.
THE PROPHETS.		
^a EARLIER PROPHETS.		
Joshua.	Joshua.	Joshua.
Judges.	Judges.	Judges.
Samuel.	Samuel.	Samuel.
Kings.	Kings.	Kings.
^b LATER PROPHETS.		
Isaiah.	Isaiah.	Isaiah.
Jeremiah.	Jeremiah.	Jeremiah,
Ezekiel.	Ezekiel.	Ezekiel
^c MINOR PROPHETS.		
Hosea.	Hosea.	Hosea.
Joel.	Joel.	Amos.
Amos.	Amos.	Jonah.
Obadiah.	Obadiah.	Nahum.
Jonah.	Jonah.	Zephaniah.
Micah.	Micah.	Malachi.
Nahum.	Nahum.	Joel.
Habakkuk.	Habakkuk.	Obadiah.
Zephaniah.	Zephaniah.	Micah.
Haggai.	Haggai.	Habakkuk.
Zechariah.	Zechariah.	Haggai.
Malachi.	Malachi.	Zechariah.
HAGIOGRAPHHA.		
Chronicles.	Chronicles.	Chronicles.
Psalms.	Psalms.	Psalms.
Job.	Job.	Job.
Proverbs.	Proverbs.	Proverbs.
Ruth.	Ruth.	Ruth.
Song of Songs.	Song of Songs.	Song of Songs.
Ecclesiastes.	Ecclesiastes.	Ecclesiastes.
Lamentations.	Lamentations.	Lamentations.
Esther.	Esther.	Esther.
Daniel.	Daniel.	Daniel.
Ezra-Nehemiah.	Ezra-Nehemiah.	Ezra-Nehemiah.

On a careful examination of the above Table, it will be seen that the important rule so often laid down — for recognising Spanish Codices from German and French MSS.; viz., that the Spanish follow the Massoretic order, whilst the German conform to the Talmudic arrangements, is not quite correct. For though the German Codices, like the Talmud, place Isaiah after Ezekiel; yet in the Hagiographa, they deviate from the Talmud, by grouping the Five Megilloth together (viz., Song of Songs, Ruth, Lamentations, Ecclesiastes, and Esther). It will, moreover, be seen that the Vienna Codex, which is Spanish, entirely differs in its arrangement of the Minor Prophets from that of the Massorah.

As the Law of Moses was from time immemorial regarded by the Jews as the most sacred part of the Hebrew Scriptures, and as having a higher degree of inspiration than the other portions of the Bible; and, moreover, as the Pentateuch alone continues to be divided into hebdomadal lessons; greater care has been bestowed upon, and a more diversified division has been introduced into the text of it, than into that of the rest of the Hebrew Verity. Hence, in describing the Massoretic phenomena of the text, it is necessary to separate the Pentateuch from the Prophets and Hagiographa.

The Pentateuch is divided in five different ways: (1) *Open Sections*; (2) *Closed Sections*; (3) *Triennial Pericopes*; (4) *Annual Pericopes*; and (5) *Verses*. Of these divisions two only, *i. e.*, the third and fifth, occur in the Prophets and Hagiographa. The Psalter, from its being a compilation of so many different hymns, forms an exception, as we shall see hereafter. The division into sections in the Pentateuch is undoubtedly the oldest breaking up of the text, and is designed to mark different topics, separate enactments, etc., and possibly also doubts upon the sequence of paragraphs. An open section begins a new line like our 'paragraph',

whence it derives the name *open section*; whilst the closed section begins a line partly occupied by the termination of the last section. It is only when the hebdomadal lesson of the annual cycle begins with a closed section, that the latter commences a new line. The vacant space in the line, indicative of a closed section, must be sufficient to occupy a trilateral word. There are in all two hundred and ninety open sections, and three hundred and seventy-nine closed sections, as follows:—

TABLE II.

OPEN AND CLOSED SECTIONS.

Open Sections.			Closed Sections.			Open Sections.			Closed Sections.			
GENESIS.			GENESIS.			GENESIS.			GENESIS.			
1	*	i.	6-8			13	xi.	1-9				
2	"	"	9-13			14	"	10-11	19	xi.	12-13	
3	"	"	14-19						20	"	14-15	
4	"	"	20-23						21	"	16-17	
5	"	"	24-31						22	"	18-19	
6	ii.	"	1-3						23	"	20-21	
7	"	"	4-iii. 15	1	iii.	16			24	"	22-23	
				2	"	17-21			25	"	24-25	
8	iii.	"	22-24						26	"	26-32	
				3	iv.	1-26	15	xii.	1-9			
				4	v.	1-5	16	"	10-18			
				5	"	6-8	17	xiv.	1-24			
				6	"	9-11				27	xv.	1-21
				7	"	12-14				28	xvi.	1-17
				8	"	15-17				29	xvii.	1-14
				9	"	18-20				30	"	15-27
				10	"	21-24	18	xviii. 1-xix. 38				
				11	"	25-27				31	xx.	1-18
				12	"	28-31				32	xxi.	1-21
				13	"	32-vi. 4	19	xxi.	22-44			
9	vi.	"	5-8				20	xxii.	1-19			
10	"	"	9-12				21	"	20-24			
				14	vi.	13-viii. 14	22	xxiii.	1-20			
				15	viii.	15-ix. 7						
				16	ix.	8-17	23	xxv.	1-11	33	xxiv.	1-67
							24	"	12-18			
11	ix.	"	18-20				25	"	19-34			
12	x.	"	1-14				26	xxvi.	1-35			
				17	x.	15-20						
				18	"	21-32						

* The references to the Chapters and Verses are according to the Hebrew Bible. The variations between the original and the Authorised Version are enumerated below.

TABLE II.—*continued.*

Open Sections.	Closed Sections.	Open Sections.	Closed Sections.
GENESIS.	GENESIS.	EXODUS.	EXODUS.
	34 xxvi. 34-35		5 vii. 14-18
	35 xxvii. 1-xxviii. 9		6 " 19-25
27 xxxii. 4-xxxiii. 17	36 xxviii. 10-xxxii. 8	10 vii. 26-29	
	37 xxxiii. 18-20		7 viii. 1-11
28 xxxv. 1-8	38 xxxiv. 1-31		8 " 12-15
29 " 9-22a		11 ix. 1-7	2 " 16-23
30 " 22b-29		12 " 8-12	
31 xxxvi. 1-19			10 ix. 18-21
32 " 31-43	39 xxxvi. 20-30	13 " 22-35	
33 xxxvii. 1-36		14 x. 1-11	
34 xxxviii. 1-30			11 x. 12-20
		15 " 21-29	
35 xl. 1-23	40 xxxix. 1-23	16 xi. 1-3	
36 xli. 1-xliv. 17			12 xi. 4-8
			13 " 9-10
	41 xliv. 18-xlvi. 7	17 xii. 21-28	14 xii. 1-20
	42 xlv. 8-27		15 " 29-36
	43 " 28-xlvii. 31	18 " 37-42	
37 xlviii. 1-22		19 " 43-50	16 " 51
38 xlix. 1-4		20 xiii. 1-10	
39 " 5-7		21 " 11-16	
40 " 8-12			17 xiii. 17-22
41 " 13		22 xiv. 1-14	
42 " 14-15	44 xlix. 16-18	23 " 15-25	
	45 " 19	24 " 26-31	
	46 " 20	25 xv. 1-19	
	47 " 21	26 " 20-21	
	48 " 22-26		18 xv. 22-26
4 " 27-1. 26			19 " 27-xvi. 3
			20 xvi. 4-10
		27 xvi. 11-27	21 " 28-30
		28 xvii. 1-7	
EXODUS.	EXODUS.	29 " 8-13	
1 i. 8-22		30 " 14-16	
2 ii. 1-22		31 xviii. 1-27	
3 " 23-25		32 xix. 1-25	
	1 iii. 1-iv. 17		
4 iv. 18-26			22 xx. 1
5 " 27-vi. 1			23 " 2-8
	2 vi. 2-9	33 xx. 8-11	24 " 7
6 vi. 10-12			
7 " 13			25 " 12
	3 " 14-28		26 " 13
	4 " 29-30		27 " 14
8 vii. 1-7			28 " 15
9 " 8-13			29 " 16
			30 " 17

TABLE II.—*continued.*

Open Sections.			Closee Sections.			Open Sections.			Closed Sections.		
EXODUS.			EXODUS.			EXODUS.			EXODUS.		
34	xx.	18-21	31	xx.	22-26				69	xxviii.	36-43
35	xxi.	1-6	32	xxi.	7-11	46	xxi.	1-10	70	xxix.	1-37
			33	"	12-13	47	"	11-16	71	"	38-46
			34	"	14	48	"	17-21			
			35	"	15	49	"	22-34			
			36	"	16				72	xxx.	84-38
			37	"	17				73	xxxi.	1-11
			38	"	18-19	50	xxxi.	12-17			
			39	"	20-21	51	xxxii.	7-14	74	" 18-xxxii.	6
			40	"	22-25	52	"	15-35			
			41	"	26-27				75	xxxiii.	1-11
36	"	28-32	42	"	33-34	53	xxxiii.	12-16			
			43	"	35-36	54	"	17-23			
			44	"	37-xxii. 3	55	xxxiv.	1-26			
			45	xxii.	4	56	"	27-35			
			46	"	5				76	xxxv.	1-3
			47	"	6-8	57	xxxv.	4-29			
			48	"	9-12	58	" 30-xxxvi.	7			
37	xxii.	13-14	49	"	15-17	59	xxxvi.	14-19	77	xxxvi.	8-13
			50	"	18				78	"	20-38
			51	"	19-23	60	xxxvii.	1-9			
38	"	24-26	52	"	27-30	61	"	10-16			
			53	xxiii.	1-3	62	"	17-24			
			54	"	4	63	"	25-29			
			55	"	5				79	xxxviii.	1-7
			56	"	6-19				80	"	8
39	xxiii.	20-25	57	"	26-33				81	"	9-20
									82	"	21-23
40	xxiv.	1-11	58	xxiv.	12-18	64	xxxix.	2-5	83	" 24-xxxix.	1
			59	xxv.	10-22				84	xxxix.	6-7
41	xxv.	1-9				65	"	8-21			
42	"	22-30				66	"	22-26			
43	"	31-40	60	xxvi.	1-14				85	"	27-29
									86	"	30-31
44	xxvi.	15-30	61	"	31-37	67	"	32-34	87	"	32
			62	xxvii.	1-8	68	xl.	1-16			
			63	"	9-19				88	xl.	17-19
			64	"	20-21				89	"	20-21
			65	xxviii.	1-5				90	"	22-23
45	xxviii.	6-12	66	"	12-14				91	"	24-25
			67	"	15-30				92	"	26-27
			68	"	31-35				93	"	28-29
									94	"	30-32
									95	"	33
						69	"	34-38			

TABLE II.—*continued.*

Open Sections.			Closed Sections.			Open Sections.			Closed Sections.		
LEVITICUS.			LEVITICUS.			LEVITICUS.			LEVITICUS.		
1	i.	14-17	1	i.	10-18	33	xvii.	1-16			
			2	ii.	1-8	34	xviii.	1-5	20	xviii.	6
			3	"	4				21	"	7
			4	"	5-6				22	"	8
			5	"	7-13				23	"	9
			6	"	14-16				24	"	10
2	iii.	1-5							25	"	11
3	"	6-11							26	"	12
4	"	12-17							27	"	13
5	iv.	1-12							28	"	14
6	"	13-21							29	"	15
7	"	22-26							30	"	16
8	"	27-31							31	"	17-30
9	"	32-35				35	xix.	1-22			
10	v.	1-10				36	"	23-32			
			7	v.	11-13				32	xix.	33-37
			8	"	14-16	37	xx.	1-27			
11	"	17-19				38	xxi.	1-9			
12	"	20-26							33	xxi.	10-15
13	vi.	1-6							34	"	16-24
14	"	12-16				39	xxii.	1-16			
15	"	17-23				40	"	17-25			
16	vii.	1-10				41	xxiii.	1-3			
17	"	11-27				42	"	4-8			
18	"	28-38				43	"	9-14			
19	viii.	1-36				44	"	23-25	35	xxii.	26-33
20	x.	8-11	10	ix.	1-x.7						
21	"	12-20				45	"	33-44			
22	xi.	1-28				46	xxiv.	1-4			
			11	xi.	29-38	47	"	5-9			
			12	"	39-47						
23	xii.	1-8				48	"	13-23	36	xxiii.	15-22
24	xiii.	1-8				49	xxv.	1-7	37	"	23-32
25	"	9-17									
26	"	18-23							38	xxiv.	10-12
27	"	24-37	13	xiii.	24-28						
			14	"	29-39				39	xxv.	8-24
28	xiv.	1-20	15	"	40-46	50	xxvi.	3-13	40	"	25-28
			16	"	47-59	51	"	14-26	41	"	29-34
29	"	30-57	17	xiv.	21-32				42	"	35-38
30	xv.	1-15				52	xxvii.	1-8	43	"	39-46
31	"	16-24	18	xv.	16-18				44	"	47-xxvi. 2
32	xvi.	1-34	19	"	25-33						
									45	xxvi.	27-46
									46	xxvii.	9-34

TABLE II.—*continued.*

Open Sections.			Closed Sections.			Open Sections.			Closed Sections.		
NUMBERS.			NUMBERS.			NUMBERS.			NUMBERS.		
1	i.	22-23	1	i.	20-21	37	vii.	66-71			
2	"	24-25				38	"	72-77			
3	"	26-27				39	"	78-83			
4	"	28-29				40	"	84-89			
5	"	30-31				41	viii.	1-4			
6	"	32-33				42	"	5-22	16	viii.	23-26
7	"	34-35				43	ix.	1-8			
8	"	36-37				44	"	9-14	17	ix.	15-23
9	"	38-39				45	x.	1-10			
10	"	40-41				46	"	11-28	18	x.	29-34
11	"	42-43							19	"	35-36
12	"	44-47				47	xi.	1-15			
13	"	48-54				48	"	16-22			
14	ii.	1-9				49	"	23-35			
			2	ii.	10-16	50	xii.	1-3	20	xii.	4-13
15	"	53-54	3	"	17	51	"	14-16			
16	iii.	1-4	4	"	18-24	52	xiii.	1-xiv. 10			
17	"	5-10	5	"	25-31	53	xiv.	11-25			
18	"	11-13				54	"	26-45			
19	"	14-26				55	xv.	1-16			
			6	iii.	27-39	56	"	17-21	21	xv.	22-26
20	"	44-51	7	"	40-43				22	"	27-31
21	iv.	1-16				57	"	32-33			
22	"	17-20				58	"	37-41	23	"	34-36
23	"	21-28				59	xvi.	1-19			
			8	iv.	29-37				24	xvi.	20-22
24	v.	1-4	9	"	38-49				25	"	23-35
25	"	5-10				60	xvii.	6-8	26	xvii.	1-5
26	"	11-31				61	"	16-24	27	"	9-15
27	vi.	1-21				62	"	25			
28	"	22-23.				63	"	26-28			
			10	vi.	24	64	xviii.	8-20	28	xviii.	1-7
29	vii.	18-23	11	"	25	65	"	25-32	29	"	21-24
30	"	24-29	12	"	26	66	xix.	1-22			
31	"	30-35	13	"	27	67	xx.	1-6			
32	"	36-41	14	vii.	1-11	68	"	7-11			
33	"	42-47	15	"	12-17						
34	"	48-53				69	"	22-29	30	xx.	12-13
35	"	54-59				70	xxi.	4-16	31	"	14-21
36	"	60-65							32	xxi.	1-3

TABLE II.—continued.

[illegible]

TABLE II.—*continued.*

Open Sections.			Closed Sections.			Open Sections.			Closed Sections.		
DEUTERONOMY.			DEUTERONOMY.			DEUTERONOMY.			DEUTERONOMY.		
			30	xiii.	13-19				73	xxiii.	8
			31	xiv.	1-2				74	"	4-7
			32	"	3-8				75	"	8-9
			33	"	9-10				76	"	10-15
			34	"	11-21				77	"	16-17
13	xiv.	22-27	35	"	28-29				78	"	18-19
			36	xv.	1-6				79	"	20-21
			37	"	7-11				80	"	22-24
			38	"	12-18				81	"	25
14	xv.	19-23							82	"	26
15	xvi.	1-8							83	xxiv.	1-4
16	"	13-17	39	xvi.	9-12				84	"	5-6
			40	"	18-20				85	"	7
			41	"	21-22				86	"	8-9
			42	xvii.	1				87	"	10-13
17	xvii.	8-13	43	"	2-7				88	"	14-15
			44	"	14-20				89	"	16
			45	xviii.	1-2				90	"	17-18
			46	"	3-5				91	"	19
			47	"	6-8				92	"	20-22
			48	"	9-22				93	xxv.	1-4
18	xix.	11-13	49	xix.	1-10	21	xxv.	17-21	94	"	5-10
			50	"	14	22	xxvi.	1-11	95	"	11-12
			51	"	15-21				96	"	13-16
			52	xx.	1-9				97	xxvi.	12-15
			53	"	10-18				98	"	16-19
			54	"	19-20	23	xxvii.	1-8	99	xxvii.	9-10
19	xxi.	1-9	55	xxi.	10-14				100	"	11-14
			56	"	15-17				101	"	15
			57	"	18-21				102	"	16
			58	"	22-23				103	"	17
			59	xxii.	1-3				104	"	18
			60	"	4				105	"	19-20
20	xxii.	6-7	61	"	5				106	"	21
			62	"	8-9				107	"	22
			63	"	10-11				108	"	23
			64	"	12	24	xxviii.	1-14	109	"	24
			65	"	13-19	25	"	15-68	110	"	25
			66	"	20-21				111	"	26
			67	"	22				112	xxviii.	60
			68	"	23-24	26	xxix.	1-8			
			69	"	25-27	27	"	9-28			
			70	"	28-29				113	xxx.	1-10
			71	xxiii.	1				114	"	11-14
			72	"	2	28	xxxi.	1-6	115	"	15-20

TABLE II.—*continued.*

Open Sections.		Closed Sections.		Open Sections.		Closed Sections.	
DEUTERONOMY.		DEUTERONOMY.		DEUTERONOMY.		DEUTERONOMY.	
29 xxxi.	14-30	116 xxxi.	6-17			118 xxxiii.	12
30 xxxii.	1-43					119 "	18-17
31 "	44-47					120 "	18-19
32 "	48-52					121 "	20-21
33 xxxiii.	1-5					122 "	22-23
		117 xxxiii.	6-7			123 "	24-29
34 "	8-11					124 xxxiv.	1-12

Accordingly the respective number of open and closed sections in each book is as follows :—

	Open Sections.		Closed Sections.	
Genesis	.	43	+	48 = 91
Exodus	..	69	+	95 = 164
Leviticus	.	52	+	46 = 98
Numbers	.	92	+	66 = 158
Deuteronomy	.	34	+	124 = 158
		<hr/> 290	+	<hr/> 379 = 669

On a closer examination of these two kinds of sections, it will be seen that they exhibit the results of ancient criticism, applied to the sequence and order of the text at large, as much as the extraordinary marks on the letters, the suspended, the inverted letters, etc., indicate the criticism of words. The *Siphra* correctly defines the great or open section (פתוחה) as comprising a complete paragraph, whilst the small or closed section (סתומה) is simply an intervening sentence between these paragraphs.⁹ But before we can fully enter into the importance of all these breaks, and explain the reason of their respective position in the text, it will be necessary to advert to the constitution of the text itself.

That the pre-Mosaic narratives embodied in the Law, such as those of the creation, the fall, the different genealogies, the flood, the tower of Babel, the call of Abraham, etc.,

⁹ מה היו הפסקות משמשות למשה ליתן ריוח להתבונן בין פרשה לפרשה ובין ענין לענין
What was the use of the sections in the Pentateuch? To give space to the intelligent to reflect between each section and each sentence (Siphra i. 9, p. 3, b, ed. Weiss, Vienna, 1862).

etc., existed before the compilation of the Pentateuch, is readily granted. A careful perusal of the Books of Moses also shows that many of the precepts existed among different families, who described the same narrative and expressed the same laws in different words. When these traditional narratives came to be written down, each story and enactment was inscribed upon a separate roll, and was circulated as a distinct scroll. Thus the genealogy of Adam was written upon a separate scroll, and hence is called a book (Gen. v. 1). The contents of Exod. xx. 19—xxiii. 33, are called in Exod. xxiv. 7 the Book of the Covenant (ספר הברית). Even the small formula of divorce is designated the Book of Divorce (ספר כריתת), because it was written on a scroll (Deut. xxiv. 1, 3). A single precept, enactment, or statement is denominated "the Law;" a term which was afterwards applied to the whole Pentateuch, because it was written on a separate scroll. Thus the Song of Moses (Deut. xxxii. 1-43) is called a Law (Deut. xxxii. 46).

When all these different narratives and 'laws,' written on separate scrolls, and circulated among various tribes, were compiled into one scroll, not only were duplicate narratives and laws recording the same thing in different words inserted, but they were incorporated without regard to logical sequence or chronological order. We propound here no theories of our own, but simply record the statements of the ancient doctors and spiritual guides of the nation, who were the custodians of the Hebrew Scriptures, and who copied and transmitted to us the text in its present form.

Thus the Talmud distinctly declares that the Pentateuch is composed of separate pieces, which were originally written upon separate scrolls, and at different times, without any organic connection.¹⁰ For instance, Exod. xxiv.

¹⁰ תורה מילה מילה נחנה *the Pentateuch was written on separate scrolls.* R. Jochanan, who records this fact in the name of R. Benaah, quotes the expression מילה ספר (Ps. xl. 8), as denoting a section in the Pentateuch. R. Levi,

1-11 ought to have been inserted before cap. xx., since the events recorded therein happened prior to the promulgation of the Decalogue on the fourth of Nisan.¹¹ Now, in looking at the Hebrew, it will be seen that this inversion, which is duly indicated in the original by an open section (פ) at the beginning (xxiv. 1) and a closed section (פ) at the end (ver. 11), begins with a verb (אָמַר) without a subject, thus showing that it has no antecedent in the section immediately preceding. Moreover, the Talmud tells us that Exod. xxxi. 18—xxxiv. 35, ought to precede xxv. 1—xxxi. 17; since the institution of the sacrificial service was in consequence of the relapsing of the people into the worship of the Egyptian Apis.¹² Here, again, the section is not only marked at the commencement (Exod. xxxi. 18), and the termination (xxxiv. 35), as closed (פ), but it begins with a verb (אָמַר) without a subject; thus showing that it has no connection with the preceding section. Again, the record of the cities of refuge for the land on the west of Jordan (Deut. xix. 1-10) is inserted after Deut. xviii., instead of following immediately Deut. iv. 41-49, which speaks of the cities of refuge on the east of

who maintains the same view, declares that eight sections (viz., Levit. xxi. 1-9, Numb. viii. 5-23, Levit. xxii. 1-16, Numb. v. 1-4, Lev. xvi. 1-34, x. 8-11; Numb. viii. 1-4, xix. 1-22) were written upon separate scrolls at the erection of the Tabernacle (*Gittin* 60 a-61 b). The same thing is stated in the Midrashim לא נכתבו פרשיותיה של תורה על הסדר *the sections in the Pentateuch are not arranged in chronological order.* Comp. *Midrash Tillim* cap. iii.

¹¹ Comp. *Mechilta* Pericope נא section iii. p. 4 a, ed. Weiss, Vienna, 1865; *Joma* 4 a and b; *Sabbath* 86 b, and Rashi's remark on Exod. xxiv. 1, פָּרְשָׁה זוֹ נִשְׁלַח בְּיָד מֹשֶׁה בְּיָד ה' וְזוֹ נִשְׁלַח בְּיָד מֹשֶׁה בְּיָד ה' *this section* (Exod. xxiv. 1-11) *was communicated before the Decalogue, as it was on the fourth of Sivan that Moses was commanded to ascend the mountain.*

¹² Comp. *Seder Olam Rabba*, cap. vi., and Rashi's remark on Exod. xxxi. 18, אֵין מִקֶּדֶם וּמֵאַחֵר בְּתוֹרָה מַעֲשֵׂה הַעֲגֹל קֹדֶם לְצוּרֵי מִלְּאכַת הַמִּשְׁכָּן יָמִים רַבִּים הָיָה שָׁחַר בֵּינֵינוּ נִשְׁחַבְּרוּ הַלִּוְיִת וּבַיּוֹם הַכְּפוּרִים נִתְרַצָּה הַקֹּהֲלָה לְיִשְׂרָאֵל וּלְמַחֲרָת הִתְחִילוּ בְּנִדְבַת הַמִּשְׁכָּן וְהוֹקֵם בְּאַחֵר בְּנִיטָן *there is no chronological order in the Pentateuch; the worship of the golden calf took place long before the building of the Tabernacle, since the two tables were broken on the seventeenth day of Tamuz, the Holy One, blessed be he, showed himself merciful to the Israelites on the Day of Atonement, and the following morning they commenced the free-will contributions for the Tabernacle, which was erected on the first of Nisan.*

Jordan. Here again two fragments are respectively marked as separate sections. Indeed the Talmud says that there are confusion and transposition of sections throughout Exod. xxi. 1 — xxiv. 18.¹³ Hence the ancient doctors and interpreters of the Scriptures felt themselves constrained to lay down the exegetical canon, that "*there is no chronological order in the sections of the Pentateuch.*"¹⁴

Now whether or not we accept the emphatic assertions of these ancient custodians of the Law, that the Pentateuch is compiled of different fragments, without regard to logical sequence or chronological order, the fact unquestionably remains, that the sages made the marks in question to indicate the detached constituencies of the compilation. In defence of this theory, however, is to be urged, that the open sections, which indicate the separate scrolls from which each book has been compiled, always comprise a complete narrative or law; that the closed or enclosed sections which intervene always contain new matter of a different import, and show that they were written upon the same scroll; and that no repetition of the same narrative or law ever occurs in an open section; which goes far to show that each such section was originally written upon a separate scroll, and was complete in itself.¹⁵

Moreover, it is to be remarked that many of these sections have separate titles, and are quoted in the oldest post-Biblical writings, where it is taken for granted that they were well known to all readers of the Scriptures. Thus

¹³ עירוב פרשיות בחיוב כחן in the Mosaic laws (פ' משפטים) certain statements are misplaced and mixed up with other passages (comp. Sanhedrin 2 b; Baba Kama 7 a).

¹⁴ מוקדם מאוחר שהוא בפרשיות which is the last of the thirty-two rules of interpretation, collected and systematised by R. Eliezer b. Jose the Galilean, one of the principal expositors of the Pentateuch in the second century of the Christian era. (Comp. Kitto, *Cyclopædia of Biblical Literature*, s. v. MIDRASH).

¹⁵ Dr. Hochstädter, who was the first to point out this fact, accounts for the hexahemeron having open (פ) sections instead of closed (פ), on the hypothesis that each day denotes a great epoch, separated from the others by ever new

in Genesis, Open Sections, i. 1-7 are quoted in the Mishna *Taanith* iv. 3; *Megilla* iii. 6. In Exodus, Open Sections, Nos. 29, 30, 47, are quoted Mishna *Megilla* iii. 4, 6; Closed Sections, Nos. 14, 22-31 are quoted Mishna *Megilla* iii. 4, *Taanith* v. 1. In Leviticus, Open Sections, Nos. 32, 42, 50, are quoted Mishna *Joma* vii. 1; *Megilla* iii. 5, 6; Closed Sections, Nos. 37, 45; Mishna *Joma* vi. 1; *Megilla* iii. 6. In Numbers, Open Sections, Nos. 26, 29, etc., 58, 66, 81, 82, are quoted Mishna *Sota* vii. 1; *Megilla* iii. 4-6; *Taanith* v. 1; *Berachoth* ii. 2; Closed Sections, Nos. 10-13, 14, 19, are quoted Mishna *Taanith* v. 1; *Megilla* iii. 6; *Jadajim* iii. 5. In Deuteronomy, Open Sections, Nos. 5, 13, 19, 21, 22, are quoted Mishna *Taanith*, v. 1; *Berachoth* ii. 2; *Sota*, vii. 2; *Megilla* iii. 4, and Closed Sections, Nos. 23, 39, 44, 52, 94, 97, are quoted Mishna *Taanith* v. 1; *Berachoth* ii. 2; *Megilla* iii. 5; *Sota* vii. 1, 2. These sections are respectively fixed for lessons on special occasions, in accordance with their import.

It is upon this theory, moreover, that the following enactment of the ancient sages with respect to the Pericopes is satisfactorily explained. They ordained that each one who is called to the public reading of the Law must read no less than three verses, and that in case these readings do not begin and end such a section, they must at least commence three verses after the section, and terminate three verses before the section, in order that those who in the

evolutions, and that the events of every day may probably have been written originally on a separate Egyptian papyrus. For a similar reason, we find here and there other open sections (׃) between closed ones of a different import, i. e., because the original materials on which the records were written were not of equal size. The presence of an open section (׃); after the third sentence in the Decalogue (Exod. xx. 7), for which however Dent. v. 11 has a closed section; (׃) is designed to indicate how the sentences are to be distributed on the Two Tables, since the division thus marked is more appropriate as regards the total number of words and letters in the Decalogue, than to leave the last five short sentences for the second Table. Still some of the marks may have been interchanged or entirely omitted, in the course of time, by ignorant transcribers. *Ben Chananja* viii. 688-690, 699-708.

interim happen to leave or to come into the Synagogue may not think that he who reads the Law before their going out or coming in only read one or two verses (*Megilla* 21 a–22 b). The section therefore determined the Pericope and not the lesson the section. This importance of the Sections led the ancients to decree that a Scroll of the Law wherein some open sections are by mistake marked as closed, or *vice versa*, is useless, just as it is illegal to read in a Codex wherein the letters are interchanged, or the poetical portions are written like prose (*Sabbath* 103 b). Indeed, according to Maimonides, it is not even lawful to correct such a Codex (*Hilchoth Sepher Thora* viii. 3).

We have only to add that in the Massoretic manuscripts and editions the open sections are generally indicated by the initial letter *Pe* (פ = פסוקה, *open*), and the closed sections are marked by the initial letter *Samech* (ס = סתומה, *closed*). But when these sections begin the hebdomadal lesson, the open section has three *Pes* (פ פ פ), and the closed section three *Samechs* (ס ס ס). In the Synagogal Scrolls, from which the Pericopes are read, these letters are entirely absent, and the sections are simply indicated by the prescribed vacant space, whilst in some of the more carefully written MSS. the mark, פתוחה, *Open Section*, or סתומה, *Closed Section*, is fully written out at each such break. This is the case in Codex No. 5710 (Harleian) of the British Museum. In Codex No. 1528 (Harleian), on the contrary, the mark is omitted, and a vacant space alone indicates the sections.

The Semi-Sabbatical Year Cycle.—Next in point of antiquity is the division of the Pentateuch into one hundred and seventy-five Pericopes. The design of this division is that the entire Law should be read through, publicly, once in every three years and a half, or twice in every Sabbatical year. It is beyond the scope of this essay to describe the guild of *Methurgemanin*, or Interpreters, to which the insti-

tution of the Pericopes gave rise, or to show how far the ancient versions, viz., the Greek of the Septuagint, Aquilla, Theodotion, Symmachus, &c., the Syriac Peshito, the Chaldee paraphrases, and the Midrashim emanated directly or indirectly from this guild. We must simply advert to the fact that the injunction to "read the Book of the Law before all Israel," on the Feast of Tabernacles of every Sabbatical year (Deut. xxxi. 10-13, with Neh. vii. 2, 8), not only gave rise to the division of the Pentateuch into hebdomadal lessons, which are read publicly to this day in the Synagogues for the instruction and edification of the Israelites, but to the belief that Moses himself instituted the Pericopes (Acts xv. 21; Josephus, *contra Apion.*, ii. 17; *Jerusalem Megilla* i. 1; *Babylon Megilla*, 31. b; *Baba Kama* 82 a).

Now, it is immaterial to our inquiry who the author of this institution is, as we have simply to point out its effects upon the division of the text. There can hardly be any doubt that at first there were no fixed and measured hebdomadal lessons assigned for the ordinary Sabbaths; that the Feasts and Fasts alone had their appropriate lessons, and that the parcelling out of the entire Pentateuch into a certain number of Pericopes was a gradual development, and became general about two centuries before Christ. Ancient authorities mention a cycle of three years and a half (*Jerusalem Sabbath* xvi. 1; *Sopherim* xvi. 10), and the Hebrew text, as transmitted to us, has a twofold pericopal division, namely a triennial and an annual cycle, and the question is, which is the oldest of the three?

From the Bible itself we gather that the Law was read before the whole community every Sabbatical year (Deut. xxxi. 10-13). After the return of the Jews from the Babylonian captivity, the "readings in the Book of the Law of God" were undoubtedly more frequent (Neh. viii. 2, 8) and special and appropriate lessons were appointed for solemn

and great occasions. It is therefore natural that as soon as fixing of Pericopes for Feasts and Fasts gave rise to the first division of the entire Pentateuch, it would be into one hundred and seventy-five hebdomadal sections, so that the Law might be read through in three years and a half, or twice in every Sabbatical year, the first cycle terminating in the month of *Nisan*, and the second in the month of *Tishri*; so that the end of the Pentateuch should coincide with the end of the Year of Release, which appeared more in harmony with the spirit of the original institution (Deut. xxxi. 10-13).

The Triennial Pericopes.—The lax observance of the Sabbatical year, however, and the ultimate total neglect to celebrate it, brought this pericopal division of the text—into one hundred and seventy-five sections—into disuse, and gave rise to the triennial cycle, or the division of the text into a hundred and fifty-four sections (סדרים). According to this division, the reading of the Law was as follows:—Gen. i. 1—Exodus xiii. 16, comprising *history*, *i. e.*, from the Creation of the world to the Exodus, was read in the first year; Exod. xiii. 17—Num. vi. 27, embracing *the laws* of both Sinai and the Tabernacle, formed the hebdomadal lessons for the second year; and Numbers vii. 1—Deut. xxxiv. 12, containing both *history* (*i. e.*, the account of the thirty-nine years' wanderings in the wilderness), and *law* (*i. e.*, the repetition of the Mosaic precepts), constituted the Sabbatical lessons for the third year. Whether the Semi-Sabbatical Year Cycle had a division of the text into a hundred and seventy five sections entirely different from the division of the Triennial one into a hundred and fifty-four sections; or whether these two divisions are identical, and the additional number of lessons for the half year was obtained by the special Pericopes for the Feasts and Fasts, will be discussed in the sequel. We subjoin a Table of the Triennial Division.

TABLE III.
THE TRIENNIAL CYCLE.

GENESIS.	
1	Gen. i. 1...ii. 3.
2	„ ii. 4...iii. 21.
3	„ iii. 22...iv. 26.
4	„ v. 1...vi. 8.
5	„ vi. 9...viii. 14.
6	„ viii. 15...ix. 17.
7	„ ix. 18...xi. 32.
8	„ xii. 1...9.
9	„ xii. 10...xiii. 18.
10	„ xiv. 1...24.
11	„ xv. 1...21.
12	„ xvi. 1...16.
13	„ xvii. 1...27.
14	„ xviii. 1...33.
15	„ xix. 1...38.
16	„ xx. 1...18.
17	„ xxi. 1...34.
18	„ xxii. 1...xxiii. 20.
19	„ xxiv. 1...41.
20	„ xxiv. 42...67.
21	„ xxv. 1...18.
22	„ xxv. 19...xxvi. 35.
23	„ xxvii. 1...27.
24	„ xxvii. 28...xxviii. 9.
25	„ xxviii. 10...xxix. 30.
26	„ xxix. 31...xxx. 21.
27	„ xxx. 22...xxxi. 2.
28	„ xxxi. 3...xxxii. 3.
29	„ xxxii. 4...xxxiii. 17.
30	„ xxxiii. 18...xxxv. 8.
31	„ xxxv. 9...xxxvi. 43.
32	„ xxxvii. 1...36.
33	„ xxxviii. 1...30.
34	„ xxxix. 1...xl. 23.
35	„ xli. 1...37.
36	„ xli. 38...xlii. 17.
37	„ xlii. 18...xliii. 13

GENESIS.	
38	Gen. xliii. 14...xliv. 17.
39	„ xliv. 18...xlvi. 27.
40	„ xlv. 28. .xlvi. 31.
41	„ xlviii. 1...22.
42	„ xlix. 1...l. 26.
EXODUS.	
1	Exod. i. 1...ii. 25.
2	„ iii. 1...iv. 17.
3	„ iv. 18...vi. 1.
4	„ vi. 2...vii. 7.
5	„ vii. 8...viii. 15.
6	„ viii. 16...ix. 35.
7	„ x. 1...29.
8	„ xi. 1...xii. 28.
9	„ xii. 29...51.
10	„ xiii. 1...xiv. 14.
11	„ xiv. 15...xvi. 3.
12	„ xvi. 4...27.
13	„ xvi. 28...xvii. 16.
14	„ xviii. 1...xix. 5.
15	„ xix. 6...xx. 26.
16	„ xxi. 1...xxii. 23.
17	„ xxii. 24...xxiv. 18.
18	„ xxv. 1...40.
19	„ xxvi. 1...30.
20	„ xxvi. 31...xxvii. 21.
21	„ xxviii. 1...43.
22	„ xxix. 1...46.
23	„ xxx. 1...38.
24	„ xxxi. 1...xxxii. 14.
25	„ xxxii. 15...xxxiv. 26.
26	„ xxxiv. 27...xxxvi. 38.
27	„ xxxvii. 1...xxxviii. 20.
28	„ xxxviii. 21...xxxix. 32.
29	„ xxxix. 33...xl. 38.

TABLE III.—*continued.*

THE TRIENNIAL CYCLE.

LEVITICUS.		NUMBERS.	
1	Levit. i. 1...iii. 17.	15	Num. xvi. 1...xvii. 15.
2	" iv. 1...vi. 11.	16	" xvii. 16...xviii. 24.
3	" vi. 12...vii. 38.	17	" xviii. 25...xx. 13.
4	" viii. 1...x. 7.	18 *	" xx. 14...xxii. 1.
5	" x. 8...20.	19	" xxii. 2...xxiii. 9.
6	" xi. 1...47.	20	" xxiii. 10...xxiv. 25.
7	" xii. 1...xiii. 28.	21	" xxv. 1...9.
8	" xiii. 29...59.	22	" xxv. 10...xxvi. 51.
9	" xiv. 1...32.	23	" xxvi. 52...xxvii. 14.
10	" xiv. 33...57.	24	" xxvii. 15...xxviii. 25.
11	" xv. 1...24.	25	" xxviii. 26...xxx. 1.
12	" xv. 25...xvi. 34.	26	" xxx. 2...17.
13	" xvii. 1...16.	27	" xxxi. 1...24.
14	" xviii. 1...30.	28	" xxxi. 25...54.
15	" xix. 1...22.	29	" xxxii. 1...42.
16	" xix. 23...xx. 27.	30	" xxxiii. 1...56.
17	" xxi. 1...xxii. 16.	31	" xxxiv. 1...xxxv. 8.
18	" xxii. 17...xxiii. 14.	32	" xxxv. 9...xxxvi. 13.
19	" xxiii. 15...xxv. 13.	DEUTERONOMY.	
20	" xxv. 14...38.	1	Deut. i. 1...ii. 1.
21	" xxv. 39...xxvi. 2.	2	" ii. 2...30.
22	" xxvi. 3...46.	3	" ii. 31...iii. 22.
23	" xxvii. 1...34.	4	" iii. 23...iv. 40.
NUMBERS.		5	" iv. 41...vi. 3.
1	Num. i. 1...54.	6	" vi. 4...vii. 11.
2	" ii. 1...34.	7	" vii. 12...viii. 20.
3	" iii. 1...iv. 16.	8	" ix. 1...29.
4	" iv. 17...v. 10.	9	" x. 1...xi. 9.
5	" v. 11...vi. 21.	10	" xi. 10...xii. 19.
6	" vi. 22...vii. 47.	11	" xii. 20...xiii. 19.
7	" vii. 48...89.	12	" xiv. 1...xv. 6.
8	" viii. 1...ix. 23.	13	" xv. 7...xvi. 17.
9	" x. 1...xi. 15.	14	" xvi. 18...xvii. 13.
10	" xi. 16...22.	15	" xvii. 14...xx. 9.
11	" xi. 23...xii. 16.	16	" xx. 10...xxii. 5.
12	" xiii. 1...xiv. 10.	17	" xxii. 6...xxiii. 9.
13	" xiv. 11...45.	18	" xxiii. 10...21.
14	" xv. 1...41.	19	" xxiii. 22...xxiv. 18.

TABLE III.—*continued.*

THE TRIENNIAL CYCLE.

DEUTERONOMY.

20	„	xxiv. 19...xxv. 19.
21	„	xxvi. 1...xxvii. 26.
22	„	xxviii. 1...xxix. 8.
23	„	xxix. 9...xxx. 10.
24	„	xxx. 11...xxxi. 13.
25	„	xxxi. 14...30.
26	„	xxxii. 1...52.
27	„	xxxiii 1...xxxiv. 12.

JOSHUA

1	Josh. i. 1...iii. 6.
2	„ iii. 7...iv. 23.
3	„ iv. 24...vi. 26.
4	„ vi. 27...viii. 32.
5	„ viii. 33...x. 7.
6	„ x. 8...41.
7	„ x. 42...xii. 24.
8	„ xiii. 1...xiv. 14.
9	„ xiv. 15...xvii. 3.
10	„ xvii. 4...xviii. 27.
11	„ xviii. 28...xix. 50.
12	„ xix. 51...xxi. 42.
13	„ xxi. 43...xxii. 33.
14	„ xxii. 34...xxiv. 33.

JUDGES.

1	Judg. i. 1...ii. 6.
2	„ ii. 7...iii. 30.
3	„ iii. 31...v. 30.
4	„ v. 31...vi. 39.
5	„ vi. 40...viii. 2.
6	„ viii. 3...ix. 6.
7	„ ix. 7...57.
8	„ x. i...xi. 31.
9	„ xi. 32...xiii. 23.
10	„ xiii. 24...xvi. 2.
11	„ xvi. 3...xviii. 5.
12	„ xviii. 6...xix. 19.
13	„ xix. 20...xx. 26.
14	„ xx. 27...xxi. 24.

SAMUEL.

1	1 Sam. i. 1...ii. 9.
2	„ ii. 10...iii. 19.
3	„ iii. 20...vi. 13.
4	„ vi. 14...ix. 1.
5	„ ix. 2...x. 23.
6	* „ x. 24...xii. 21.
7	„ xii. 22...xiv. 22.
8	„ xiv. 23...xv. 16.
9	„ xv. 17...xvi. 17.
10	„ xvi. 18...xvii. 36.
11	„ xvii. 37...xviii. 13.
12	„ xviii. 14...xx. 3.
13	„ xx. 4...41.
14	„ xx. 42...xxiii. 3.
15	„ xxiii. 4...xxiv. 20.
16	„ xxiv. 21...xxv. 32.
17	„ xxv. 33...xxvi. 24.
18	„ xxvi. 25... xxviii. 23.
19	„ xxviii. 24...xxx. 24.
20	„ xxx. 25...2 Sam. ii. 6.
21	2 Sam. ii. 7...iii. 20.
22	„ iii. 21...v. 9.
23	„ v. 10...vii. 15.
24	„ vii. 16...x. 11.
25	„ x. 12...xii. 12.
26	„ xii. 13...xiv. 17.
27	* „ xiv. 18...xv. 24.
28	* „ xv. 25...xvi. 15.
29	* „ xvi. 16...xvii. 19.
30	„ xvii. 20...xviii. 26.
31	„ xviii. 27...xix. 39.
32	„ xix. 40...xxi. 6.
33	„ xxi. 7...xxii. 50.
34	„ xxii. 51...xxiv. 25.

KINGS.

1	1 Kings. i. 1...47.
2	„ i. 48...ii. 44.
3	„ ii. 45...iv. 19.

TABLE III.—continued.

THE TRIENNIAL CYCLE.

[illegible]

TABLE III.—*continued.*

THE TRIENNIAL CYCLE.

JEREMIAH.

17	Jeremiah	xxx. 9...xxxi. 32.
18	"	xxxi. 33...xxxii. 21.
19	"	xxxii. 22...xxxiii. 15
20	"	xxxiii. 16...xxxv. 9.
21	"	xxxv. 10...xxxvi. 25.
22	"	xxxvi. 26...xxxviii. 7.
23	"	xxxviii. 8...xxxix. 17.
24	"	xxxix. 18...xlii. 11.
25	"	xlii. 12...xliv. 19.
26	"	xliv. 20...xlvi. 26.
27	"	xlvi. 27...xlviii. 11.
28	"	xlviii. 12...l. 4.
29	"	l. 5...li. 9.
30	"	li. 10...58.
31	"	li. 59...lii. 34.

EZEKIEL.

1	Ezekiel	i. 1...iii. 11.
2	"	iii. 12...v. 17.
3	"	vi. 1.. vii. 27.
4	"	viii. 1...x. 8.
5	"	x. 9...xi. 19.
6	"	xi. 20...xiii. 23.
7	"	xiv. 1...xvi. 13.
8	"	xvi. 14...59.
9	"	xvi. 60...xviii. 8.
10	"	xviii. 9...xix. 14.
11	"	xx. 1...40.
12	"	xx. 41...xxii. 15.
13	"	xxii. 16...xxiii. 26.
14	"	xxiii. 27...xxiv. 23.
15	"	xxiv. 24...xxvi. 19.
16	"	xxvi. 20...xxxviii. 12.
17	"	xxxviii. 13...xxix. 20.
18	"	xxix. 21...xxxi. 18.
19	"	xxxii. 1...xxxiii. 15.
20	"	xxxiii. 16...xxxiv. 25.
21	"	xxxiv. 26...xxxvi. 24.
22	"	xxxvi. 25...xxxvii. 27.

EZEKIEL.

23	Ezekiel	xxxvii. 28...xxxix. 21.
24	"	xxxix. 22...xl. 44.
25	"	xl. 45...xlii. 12.
26	"	xlii. 13...xliii. 26.
27	"	xliii. 27...xlvi. 14.
28	"	xlvi. 15...xlvii. 11.
29	"	xlvii. 12...xlviii. 35.

MINOR PROPHETS.

1	Hosea.	i. 1...vi. 1.
2	"	vi. 2...x. 11.
3	"	x. 12...xiv. 5.
4	"	xiv. 6...Joel. ii. 26.
5	Joel.	ii. 27 ..Amos. ii. 9.
6	Amos.	ii. 10...v. 13.
7	"	v. 14...vii. 14.
8	"	vii. 15...Obad. i. 20.
9	Obad.	i. 21...Jonah iv. 11.
10	Micah.	i. 1...iv. 4.
11	"	iv. 5...vii. 19.
12	"	vii. 20...Nah. iii. 19.
13	Hab.	i. 1...iii. 19.
14	Zeph.	i. 1...iii. 19.
15	"	iii. 20...Hag. ii. 22.
16	"	ii. 23...Zech. iv. 1.
17	"	iv. 2...vi. 13.
18	"	vi. 14...viii. 3.
19	"	viii. 4...xi. 17.
20	"	xii. 1...xiv. 20.
21	"	xiv. 21...Mal. iii. 24.

CHRONICLES.

1	1 Chron.	i. 1...iv. 9.
2	"	iv. 10...vi. 33.
3	"	vi. 34...viii. 39.
4	"	viii. 40...xi. 3.
5	"	xi. 4...xii. 39.
6	"	xii. 40...xvi. 35.
7	"	xvi. 36...xix. 12.

TABLE III.—*continued.*

THE TRIENNIAL CYCLE.

8	1 Chron.	xix. 13...xxii. 19.
9	„	xxiii. 1...xxvi. 4.
10	„	xxvi. 5...xxviii. 10.
11	„	xxviii. 11...2 Chron. ii. 1.
12	2 Chron.	ii. 2...v. 14.
13	„	vi. 1...vii. 10.
14	„	vii. 11...ix. 21.
15	„	ix. 22...xii. 12.
16	„	xii. 13...xv. 14.
17	„	xv. 15...xviii. 17.
18	„	xviii. 18...xx. 30.
19	„	xx. 31...xxiii. 11.
20	„	xxiii. 12...xxvi. 2.
21	„	xxvi. 3...xxix. 10.
22	„	xxix. 11...xxxi. 10.
23	„	xxxi. 11...xxxiv. 2.
24	„	xxxiv. 3...xxxv. 9.
25	„	xxxv. 10...xxxvi. 23.

PSALMS.

1	Psalms	i. 1...xi. 6.
2	„	xi. 7...xx. 10.
3	„	xxi. 1...xxix. 11.
4	„	xxx. 1...xxxv. 28.
5	„	xxxvi. 1...xli. 14.
6	„	xlii. 1...xlix. 21.
7	„	l. 1...lvii. 12.
8	„	lviii. 1...lxvii. 8.
9	„	lxviii. 1...lxxii. 20.
10	„	lxxiii. 1...lxxviii. 37.
11	„	lxxviii. 38...lxxxiv. 13.
12	„	lxxxv. 1...xc. 17.
13	„	xc. 1...c. 5.
14	„	ci. 1...cv. 45.
15	„	cvi. 1...cxix. 72.
16	„	cxix. 73...cxxxviii. 6.
17	„	cxxxix. 1...cxli. 14.
18	„	cxli. 1...cl. 6.

JOB.

1	Job	i. 1...v. 27.
2	„	vi. 1...xi. 20.
3	„	xii. 1...xvii. 8.
4	„	xvii. 9...xxii. 30.
5	„	xxiii. 1...xxix. 13.
6	„	xxix. 14...xxxiii. 33.
7	„	xxxiv. 1...xxxviii. 34.
8	„	xxxviii. 35...xlii. 17.

PROVERBS.

1	Prov.	i. 1...v. 19.
2	„	v. 20...ix. 10.
3	„	ix. 11...xiv. 3.
4	„	xiv. 4...xviii. 9.
5	„	xviii. 10...xxii. 21.
6	„	xxii. 22...xxv. 12.
7	„	xxv. 13...xxviii. 16.
8	„	xxviii. 17...xxxi. 31.

ECCLESIASTES.

1	Eccles.	i. 1...iii. 12.
2	„	iii. 13...vi. 12.
3	„	vii. 1...ix. 6.
4	„	ix. 7...xii. 14.

ESTHER.

1	Esther	i. 1...ii. 4.
2	„	ii. 5...iii. 7.
3	„	iii. 8...vi. 10.
4	„	vi. 11...viii. 14.
5	„	viii. 15...x. 3.

DANIEL.

1	Daniel	i. 1...ii. 34.
2	„	ii. 35...iii. 30.
3	„	iii. 31...v. 12.
4	„	v. 13...vi. 10.
5	„	vi. 11...ix. 3.

TABLE III.—*continued.*

THE TRIENNIAL CYCLE.

DANIEL.		EZRA.—NEHEMIAH.	
6	Daniel ix. 4...x. 21.	4	Ezra viii. 35...Neh. i. 10.
7	„ xi. 1...xii. 13.	5	Neh. i. 11...ii. 18.
		6	„ ii. 19...vi. 15.
EZRA.—NEHEMIAH.		7	„ vi. 16...viii. 9.
1	Ezra i. 1...iii. 13.	8	„ viii. 10...ix. 37.
2	„ iv. 1...vi. 18.	9	„ x. 1...xii. 26.
3	„ vi. 19...viii. 34.	10	„ xii. 27...xiii. 31.

Before proceeding to discuss the antiquity of this cycle, I must make a few remarks upon the textual condition of the List itself. As none of the MSS. that I have hitherto collated give it formally, I have been obliged to work it out according to the printed edition of Jacob b. Chajim Ibn Adonijah, which, as we shall presently see, is both defective and incorrect in several instances. The oldest MS. in the British Museum (No. 5,720, Harl.), which is of about the eleventh century, and which is unfortunately imperfect, gives at the end of each book both the number of verses and *Sedarim* (סדרים), or triennial sections therein contained. But as this MS. is simply a fragment, beginning with Joshua vii. 22, and breaking off at Ezek. xlv. 19, we have the sum total of the *Sedarim* in six books only. They are as follows—

1	Joshua	.	14	4	Kings	.	35
2	Judges	.	14	5	Isaiah	.	26
3	Samuel	.	34	6	Jeremiah	.	32

It will be seen that in five out of the six books the sum total of this MS. agrees with the printed text, and that in the sixth book, *i. e.*, Jeremiah, the Codex gives one more than the List. As it does not, however, give the commencing words of the respective *Sedarim*, it is impossible to say whether the mistake rests with the MS. or

with the printed List, which not only gives the sum total of each book, but also the words wherewith every section begins.

As to the omissions and errors in the published text, which admit of no doubt, we have to remark that it omits one section in Genesis. This is evident from the distinct declaration of the superscription that Genesis (סדריו מ"ג) "*has forty-three sections*," and moreover is placed beyond the possibility of a doubt by the Massoretic remark at the end of Genesis, which not only gives this number in letters, but also expresses it in the following mnemonical sign וסדריו מ"ג ירד"ה סימן, "*Genesis has forty-three Sedarim, and the sign thereof is JEDIDIAH*," which name is numerically forty-three. Heidenheim has actually found the omitted section (Gen. viii. 1-14) in a MS.¹⁶ Indeed there is another section omitted from the Pentateuch, since no less an authority than Rab (*i. e.*, Abba Areka), the President of the College at Babylon (A. D. 200), who came from Palestine, where the cycle obtained, distinctly gives קנה, *purchaser* [= 155] as the mnemonical sign for the number of the *Sedarim*.¹⁷

Besides these omissions, there are the following blunders. In Numbers, section 18 ought to be וישלח משה מלאכים, *and MOSES sent messengers*, instead of וישלח מלאכים, *and he sent messengers* (xx. 14). In Samuel, section 6 should be ויאמר שמואל אל כל העם, *and Samuel said to all the people* (x. 24), and not ויאמר שמואל כל העם, *and Samuel said*

¹⁶ Finding that the List gives only forty-two instances in Genesis, Buxtorf, in his edition of the Rabbinic Bible, altered the superscription into forty-two, but overlooked the fact that the number forty-three is given still more distinctly at the end of Genesis, and thus, by his mistaken correction, made these two statements to contradict each other. He rightly corrected section 6 in Samuel, but left all the other errors.

¹⁷ רב אמר ע"י שלא הקניחם דברי הברית שאין בכם מי קונה דבר המש ספרי מנן של קנה. *Midrash, on Esther, at the beginning, or sect. 116.*

all the people. Section 27, ויאמר המלך אל אבישי, *and the king said to Abishai*, is a mistake for ויען המלך ויאמר אל האשה, *and the king answered, and said to the woman*, (2 Sam. xiv. 18). Section 28, ויאמר יואב אל המלך, *and Joab said to the king*, should be ויאמר המלך לצדוק, *and the king said to Zadok* (xv. 25), because this is the section in the MSS., and because the former passage only occurs once, and that at the end of the book (xxiv. 3), where there is no break. Section 29, ויאמר חושי רעה דוד, *and Hushai, David's friend, said*, is evidently a mistake, since these words occur nowhere, and it ought to be ויהי כאשר בא חושי הארכי רעה דוד, *and it came to pass when Hushai the Archite, David's friend, was come* (xvi. 16). In Kings, section 24, וימהרו ויקח, *and they hastened and he took*, is a mistake for וימהרו ויקחו, *and they hastened and they took* (2 Kings ix. 13). In Isaiah, again, sections 3 and 4 are transposed. It will moreover be seen that Ruth, the Song of Songs, and Lamentations are entirely omitted in Jacob b. Chajim's List of *Sedarim*.

A more serious difficulty connected with this List is the fact that the verse ending the previous section or the second in the *Sedar* is frequently given as the sign for the new division. Should this be doubted, I refer to the Table of Chapters throughout the Bible, which Jacob b. Chajim also gives with the List of the *Sedarim*. The signs for the chapters, which are divided according to the Vulgate, instead of being the commencing words of the new chapter, are frequently the termination of the previous one. Thus, for instance, the sign for Exod. xxix. is חוקת עולם לו ולזרעו, *it shall be a statute for ever unto him and his seed*, which is the concluding verse of cap. xxviii. For Numb. xiii. the sign is ואחר נסעו, *and afterwards the people removed*, which is the last verse of cap. xii. The sign for Numb. xxi. is ויראו כל העדה, *and when all the congregation saw*, which is the concluding verse of cap. xx. The sign for 1 Sam. x. is אמור לנער ויעבור לפנינו, *bid*

the servant pass on before us, which is ix. 27. The sign for 1 Sam. xxvii. is וַיֵּלֶךְ דָּוִד לְדַרְכּוֹ, so *David went on his way*, which constitutes the middle of 1 Sam. xxvi. 5. These few instances, which might easily be multiplied, will suffice to substantiate the correctness of my remark. If other evidence is required, I simply refer to the divisions of the Psalms in the original of the Triennial List itself. Hence, in reducing the signs to chapter and verse, I have not hesitated to correct the references, according to the sectional divisions in the MSS. Still the difference between the List and my corrections rarely amounts to more than a single verse.

As the triennial division has been overlooked in Introductions to and Dissertations on the text of the Old Testament, where the annual division is alone spoken of, it will be necessary to demonstrate the greater antiquity of the former. The design and nature of these Pericopes presuppose the shorter, *i. e.* the triennial, rather than the longer, or the annual, cycle. Every hebdomadal lesson was divided into seven sections, corresponding to the seven days of the week, and seven individuals were called in succession up to the desk to read respectively one of those sections (*Mishna Megilla* iv. 2.). The honour to be prælector of the Divine Law was deemed so great, that an order of precedence had to be fixed (*Mishna Gittin* v. 8). With a due regard for the feelings of all juvenile members of the congregation, and to stimulate them to the study of Holy Writ, children had a full right to be among the seven prælectors; and that each child might be able to read his respective portion of the Pericope with fluency and intelligence, it was allowed him, by way of exemption, to prepare the lesson by the oil lamp on Sabbath eve, a practice forbidden to all grown-up persons.¹⁸ The law that each one of the seven called up to

¹⁸ ר' שמעון בן נמליאל אומר החינוקות של רבן היו מסדרין פסיוותהון וקורין לאור הנר
Sabbath 13 a with Tosephta Sabbath i. The injunction that children should

the lectern should personally read his part of the seven portions of the Sabbatic lesson, was still observed as late as the twelfth century.¹⁹ When it is borne in mind that the Synagogal Scrolls of the Law from which the Pericopes are read have neither the vowel points, nor the accents, it will be seen at once that it would have been very difficult for the ordinary people, and more especially for children, to read such long sections as are contained in the annual cycle. To obviate this difficulty, a rule was laid down, "the shorter the lesson the better."²⁰ Hence, if there were no other evidence, we should conclude, from this fact alone, that the triennial cycle was the older.

Moreover, we are distinctly told that the minimum of the Sabbatic lesson is to be twenty-one verses, and the maximum thirty-five verses; that even the ordinary cycle of Pericopes is to be interrupted if a festival or New Moon happens to occur on a Sabbath when a special lesson appropriate to the occasion is read; and that after the interruption the ordinary

prepare the Pericope, and the permission that they might do it by the oil lamp on Sabbath eve, like all other laws, were afterwards extended to all, and it was insisted upon that every one should read over the lesson two or three times, though none but children were to do so by the lamp on Sabbath eve. *Midrash Tanchuma*, Pericope *Jethro* p. 82 b.

¹⁹ Those who could not read were debarred from the privilege of being called to the lectern. As such ignorance of the sacred tongue occurred only in the congregations out of Palestine, it was enacted that, in case there is only one student in the assembly, he is to read the whole Pericope הלועזות לא נהנו כן אלא אחד קורא כל הפרשה כולה הוה יודע אחד את הפרשה קורה את כולה *Jerusalem* שבועה יורעין ג' פסוקין כולהון קראי אחד יודע ג' פסוקים קרי וחור קרי *Megilla* iv. 3. As late as the tenth century we find that Saadia would only allow, by way of exception, an ignorant priest or Levite to be called to the reading וכתב ר' סעדיה שאם הם צריכין לזה האיש שאינו יודע לקרות שיעלה לפי שהוא כהן או לוי ואין שם אחר וולחו יראה שליח צבור אם שיקרא לו מלה במלה יודע לאמרה כהן או לוי ואין שם אחר וולחו יראה שליח צבור אם שיקרא לו מלה במלה יודע לאמרה יכול לקרות ואם לאו לא יעלה *R. Saadia declared, if the man who cannot read is absolutely wanted because he is a priest or Levite, and there is no other one besides him, the delegate of the congregation must see whether he can repeat after him, word by word; and if not, he must not be called up.* (Comp. *Abudriham*, section *Tephila Shel Chol*; *Maimonides*, *Hilchoth Tephila*, xii. 5; and *Graetz*, *Monatsschrift*, xviii. p. 389.)

²⁰ אין קורין בתורה פחות מג' פסוקים אין מפטירין בנביא פחות מג' פסוקים המקצר הרי זה משובח (*comp. Tosephta Megilla*, iii.)

the triennial cycle. We have dwelt thus much upon this question, because the annual cycle, which, as we shall presently see, became universal at a very late date, has been the cause of the introduction of fresh divisions, as well as new names of sections in the Hebrew MSS., and printed text, and because this fact has been ignored by paleographers, and is entirely omitted from the Introductions to the Old Testament.

Indeed the neglect of these ancient divisions in more modern MSS. became so great, that even Jacob b. Chajim, Ibn Adonijah, the first editor of the Massorah, could not procure a list of them whilst editing his recension of the text till he had almost finished his gigantic work. He was therefore compelled to follow the example of Felix Pratensis (*vide supra* p. 297, note 7), and introduce into the text of the Old Testament the Christian division into chapters, which was adopted for the first time, for anti-Christian purposes, by R. Isaac Nathan, in his Concordance, (1437-1445), printed in Venice, 1523, and which, as we shall see hereafter, frequently disturbs both the connection and the sense. Jacob b. Chajim's words are, "Had I at that time [when beginning to print the Hebrew Bible] found the division into sections which was made by the Massorites throughout the whole Scriptures, I would have preferred it to that which was introduced by Isaac Nathan. But since it came into my hand after I had almost finished my work, I determined to print it as well, so that it may not be forgotten, and lost to Israel."²³ It is therefore surpassing strange that Dr. Davidson should ascribe the authorship of these divisions to Jacob b. Chajim himself. "Jacob ben Chajim," says this learned critic, "editor of Bomberg's second Rabbinical Bible, divided the entire Old Testament into *Seda-*

²³ Jacob b. Chajim Ibn Adonijah, *Introduction to the Rabbinic Bible*, Hebrew and English, by Christian D. Ginsburg, LL.D., p. 82, 2nd ed., Longmans, 1867.

rim (סדרים), which are numbered and appended to each book, along with the *parshioth* and verses. He made four hundred and forty-seven divisions of this kind.”²⁴

We now come to the question whether the hundred and seventy-five divisions of the Semi-Sabbatical Year Cycle were different from those we now possess,—and if so, lost,—or whether they are identical with the divisions of the Triennial cycle. The well known tenacity with which the Jewish nation clung to tradition, and the faithful manner in which they have conserved and transmitted even the words and signs of the Bible which the scribes distinctly marked as spurious, would of themselves prove that they would not allow such an important thing as a list of Pericopal divisions to be entirely lost. We are therefore driven to enquire whether the more ancient cycle of three and a half years could not be converted into the Triennial cycle, with the retention of the time-honoured liturgical division of the text which was already in existence. Assuming that the division of the Pentateuch into a hundred and fifty-five sections was the authorised one for the Pericopes, we shall see that it equally suited both cycles, and that, in fact, it was the division for both, at the period of the transition from the Semi-Sabbatical into the Triennial.

Now we are told in the Mishna that the Pericopes were interrupted on New Moon, the Feast of Dedication, on Purim, on the Fasts, on the Representative Days,²⁵ and on

²⁴ *A Treatise on Biblical Criticism, exhibiting a Systematic View of that Science*, p. 59, Longmans, 1854.

²⁵ The fact that every individual who brought a sacrifice had to be present in the Temple when it was offered gave rise to the opinion that the whole congregation ought to be represented in the Temple at the offering of the daily morning and evening sacrifice, which were brought for the benefit of the whole community of Israel, and were the national sacrifice. To effect this, the nation was divided into twenty-four divisions or orders, corresponding to the divisions of the priests and Levites. Every division chose a number of representatives (אנשי מעמד), one of whom was appointed chief (המעמד), and in turn sent up some of them as a deputa-

the Day of Atonement, in order that the special lessons referring to those occasions might be read (*Megilla* iii. 4). As lessons both from the Law and the Prophets were read on the Sabbath, the question naturally arises, Which of these two fell out of its course? Was it the hebdomadal lesson from the Pentateuch, which gave way to the special Pericope for the Feast or Fast in question, or was it the lesson from the Prophets? In the Talmud, where this question is discussed, R. Ammi says that the lesson from the Pentateuch was interrupted, whilst R. Jeremiah maintains that it is the lesson from the Prophets which was interrupted (*Megilla* 30 b).²⁶ As both Rabbins were Palestinians, they must have been correctly informed about the usages of the country in past days, and there can therefore be no doubt that both the modes of regulating the lectionary are correct, only that they prevailed at different periods. During the period when the Semi-Sabbatical year cycle was in vogue, the special lesson for the Feast or Fast which happened on a Sabbath was read on the festival Sabbath, and the hebdomadal lesson, which would otherwise have been read on that day, was postponed to, and resumed on, the following Sabbath. Hence, it was the addition of the special lessons for the Feasts and Fasts to the ordinary hebdomadal which increased it from a hundred and fifty-five to a hundred and seventy-five, thus yielding the Semi-Sabbatical year cycle.

There can, however, hardly be any doubt that the provision of a hundred and seventy-five Pericopes for the Semi-

tion to Jerusalem to represent the nation at the daily sacrifices in the Temple, and to recite the prayers and blessings in behalf of the people whilst the sacrifices were being offered. They had also to fast four days (*i. e.*, the second, third, fourth, and fifth) during the week of their representation. Those of the representatives who remained at home assembled in a synagogue to pray during the time of sacrifice. It is this which is meant by "Representative Days." Comp. Kitto, *Cyclopædia of Biblical Literature*, s.^{v.} HALLEL.

²⁶ For the Mishna and the discussion, see above, p. 327, note 21.

Sabbatical order, already marks the transition period from this system to the Triennial system, and that originally there were a hundred and eighty-five Pericopes, since there may be two intercalaries in three years and a half. As the maximum number was always provided for, thirty additional Pericopes must have been added to the hundred and fifty-five regular hebdomadal lessons, for the possible thirty festival Sabbaths which might occur in this space of time; viz., twelve Sabbaths of the so-called four *Parshijoth*, six New Moons which may fall on the Sabbath; three Sabbaths on which a day of Feast of the Dedication falls, and seven Sabbaths on which days of the Feasts of Passover and Tabernacles fall. To these must be added two days more, because the Feast of Pentecost, the Day of Atonement, and the eighth day of Tabernacles, or of the Feast of Dedication, may also fall on the Sabbath, thus making in all thirty additional Pericopes. The fact that a hundred and seventy-five Pericopes only are mentioned in *Sopherim* (xvi. 10), instead of a hundred and eighty-five, shows that ten Festival Pericopes were then substituted for the regular hebdomadal lessons, viz., on the six Sabbaths which coincided with New Moon, on the three Sabbaths whereon a day of the Feast of Dedication falls, and on the one Sabbath whereon the Day of Atonement occurred. This explains the otherwise unintelligible statement in the Mishna (*Megilla* iii. 4), that on the New Moons, the Feast of Dedication, etc., and the Day of Atonement the Pericopes were interrupted, whilst it says nothing about those of the other festivals.²⁷

When the celebration of the Sabbatic year ceased, and with it the arrangement of the Pericopes in a Semi-Sabbatical year cycle was gradually discarded, the festival lessons which

²⁷ Comp. Duschak, *Geschichtliche Darstellung des Jüdischen Cultus*, p. 253
 Manheim, 1866.

interrupted the hebdomadal readings and extended the lectionary to three years and a half, were substituted for, the Pericopes from the Prophets. The reading, therefore, of the extra Pericopes immediately after the ordinary Sabbatic lesson reduced the cycle into a triennial. In the one cycle, therefore, the Pericopes from the Pentateuch were interrupted by the Festival lessons, as is declared by R. Ammi; and in the other cycle the Pericopes from the Prophets were interrupted, as is stated by R. Jeremiah; whilst in both cycles a hundred and fifty-five sections constituted the division of the Law.

From the above Table it will be seen that the Prophets and Hagiographa were also divided into a triennial cycle, and there can hardly be a doubt that they too were read through in hebdomadal lessons. The Prophets were read in connection with the Mussaph Prayer,²⁸ and certain Benedictions were ordained to be recited before and after the reading of these Prophetic Pericopes. These Benedictions, with few modifications, are used to this day by the Jews, at the reading of the lessons from the Prophets, only that the present Pericopes from the Prophets (הפטרות) are simply a selection from the ancient triennial cycle. Equally certain it is that the Hagiographa were also read as hebdomadal lessons. These Pericopes were read at *Mincha* or Evening Prayer. This is not only evident from the fact that they are included in the ancient triennial cycle, but from the express declaration of the Talmud that "at Nehardea lessons from the Hagiographa were read at Evening Prayer on the Sabbath."²⁹

²⁸ Hence the remark in the Mishna, וְהוּא אֶחָד שֵׁמַע, דְּרוּם, המפטר נבניא הוא פורס את שמע, והוא he who reads the lessons from the Prophets recites the SHEMA, [i.e. the Section about the unity of the Deity, Deut. vi. 4-9], and goes up before the ark, i. e. to say the Kadesh and Barecha for those who first come into the Synagogue at Mussaph Prayer (*Megilla* iv. 5). Comp. Tosaphoth and Jomtob Heller *in loco*.

Sabbath 116 b. Comp. also בנהרצא פסקו סדרא בנחובים במנחתא דשבתא ²⁹
ibid. 24 a, Rashi, and Tosaphoth in loco: *Megilla* 21 v.

Indeed the Benediction recited at the reading of these lessons is still preserved. "He who reads in the Hagiographa," says the *Massecheth Sopherim* (xii. 4) "must say, Blessed be Jehovah, our God, King of the Universe, who hast sanctified us with Thy commandments and enjoined us to read in the Hagiographa."⁸⁰

The Annual Cycle.—The next division of the Pentateuchal text in point of antiquity is into fifty-four hebdomadal lessons, to provide a special section for every Sabbath of those years which have fifty-four Sabbaths. It is here to be remarked that the maximum number of Sabbaths in the year is fifty-four, whilst the minimum is forty-seven, and that in dividing the Law into Pericopes provision had to be made for the maximum number. The fifty-four lessons are required in the intercalary year in which the Feast of New Year falls on Thursday, and the months *Cheshvan* (חשוון) and *Kislev* (כסליו) have respectively twenty-nine days. The years which have only forty-seven Sabbaths are those in which New Year falls on a Monday, and the months *Cheshvan* and *Kislev* have respectively thirty days, or in which New Year falls on a Saturday, and the months in question are regular, that is, *Cheshvan* has twenty-nine days, and *Kislev* thirty. To provide for the maximum number of weeks, it has been ordained that fourteen of the fifty-four Pericopes are to be read in pairs. They are as follows, Nos. 22 and 23, 27 and 28, 29 and 30, 32 and 33, 39 and 40, 42 and 43, 50 and 51. If the year has neither of these extremes, only so many of the fourteen are read in pairs as will supply Pericopes for the varying number of Sabbaths. The first Pericope is read on the Sabbath after the Feast of Tabernacles, and the last on the concluding day of the following Feast of Tabernacles, so that the whole Pentateuch is read through in a year.

⁸⁰ הקורא בכתובים צריך לומר ברוך אתה יהוה אלהינו מלך העולם אשר קדשנו במצותיו וצונו לקרות בכתבי קודש

TABLE IV.

THE ANNUAL CYCLE, OR PERICOPAL DIVISION.⁸¹

		Name of each Pericope.		Number of Verses, and Mnemonical Sign.
1	1	בראשית <i>Bereshith</i>	Gen. i. 1-vi. 8	146 = יחזקיהו <i>Jehiz-kiah</i> , אמציה <i>Amaziah</i> .
2	2	נח <i>Noach</i>	" vi. 9-xi. 32	153 = אבי יסכה לוט <i>the father of Isaac is Lot</i> , בצלאל <i>Besaleel</i> .
3	3	לך לך <i>Lech Lecha</i>	" xii. 1-xvii. 27	126 = מנדרבי <i>Machna-debai</i> , נמלו <i>out off</i> .
4	4	וירא <i>Vayera</i>	" xviii. 1-xxii. 24	147 = אמנון <i>Amnon</i> .
5	5	חיי שרה <i>Chaye Sarah</i>	" xxiii. 1-xxv. 18	105 = יהוירע <i>Jehoiada</i> .
6	6	תלדות <i>Toldoth</i>	" xxv. 19-xxviii. 9	106 = יהלאל <i>Jehalelel</i> .*
7	7	ויצא <i>Vayetze</i>	" xxviii. 10-xxxii. 3	148 = מחנים <i>Mahanaim</i> , הלקי <i>Helkai</i> .
8	8	וישלח <i>Vayishlach</i>	" xxxii. 4-xxxvi. 48	154 = קליטה <i>Kelita</i> .
9	9	וישב <i>Vayesheb</i>	" xxxvii. 1-xl. 28	112 = יבק <i>Jabbok</i> .
10	10	מקץ <i>Miketz</i>	" xli. 1-xliv. 17	146 = יהיה לי עבר <i>he shall be my servant</i> , אמציה <i>Amaziah</i> , יחזקיהו <i>Jehizkiah</i> .
11	11	ויגש <i>Vayigash</i>	" xlv. 18-xlvii. 27	106 = יהלאל <i>Jehalelel</i> .
12	12	ויחי <i>Vayechi</i>	" xlvii. 28-l. 26	85 = ימלה <i>Imlah</i> .*
13	1	שמות <i>Shemoth</i>	Exod. i. 1-vi. 1	124 = מערי <i>Maadai</i> , ויקח <i>and he took</i> .
14	2	וארא <i>Vaeira</i>	" vi. 2-ix. 35	121 = יעיל <i>Jeiel</i> , ניבעול <i>caliz</i> .
15	3	בא <i>Bo</i>	" x. 1-xiii. 16	105 = ימנה <i>Jimnah</i> .
16	4	בשלה <i>Beshalach</i>	" xiii. 17-xvii. 16	116 = סנאה <i>Senaah</i> , יד אמונה <i>a faithful hand</i> .
17	5	יתרו <i>Yithro</i>	" xviii. 1-xx. 28	77 = יהונדב <i>Jehonadab</i> .*
18	6	משפמים <i>Mishpathim</i>	" xxi. 1-xxiv. 18	118 = חנני <i>Hanani</i> , עזיאל <i>Uzziel</i> .
19	7	תרומה <i>Therumah</i>	" xxv. 1-xxvii. 19	96 = סלן <i>Sallu</i> , ועין <i>his shovels</i> .
20	8	תצוה <i>Thetzaveh</i>	" xxvii. 20-xxx. 10	101 = מיכאל <i>Michael</i> .
21	9	כי תשא <i>Ki Thisa</i>	" xxx. 11-xxxiv. 15	189 = חננאל <i>Hananeal</i> .
22	10	ויקהל <i>Vayakhel</i>	" xxxv. 1-xxxviii. 20	122 = סנואה <i>Senuah</i> .
23	11	פקודי <i>Pekudai</i>	" xxxviii. 21-xl. 28	91 = עבדיה <i>Obadiah</i> .*
24	1	ויקרא <i>Vayikra</i>	Levit. i. 1-v. 26	111 = יעלא <i>Jaalah</i> .*
25	2	צו <i>Tzav</i>	" vi. 1-viii. 36	97 = סלוא <i>Salu</i> .*
26	3	שמיני <i>Shemini</i>	" ix. 1-xi. 47	91 = עבדיה <i>Obadiah</i> .
27	4	תזריע <i>Thazriah</i>	" xli. 1-xlii. 59	67 = בניה <i>Benaiah</i> .
28	5	מצורח <i>Metzorah</i>	" xiv. 1-xv. 88	90 = ידדו <i>Iddo</i> .

⁸¹ All the numbers with the mnemonical signs, which are marked with asterisks throughout this Table, are wanting in the printed editions of the Rabbinical Bibles with the Massorah, and I have supplied them from various MSS. A more detailed criticism of its textual condition is given below, pages 353, 4.

TABLE IV.—*continued.*

Name of each Pericope.				Number of Verses, and Mnemonical Sign.
29	6	אחר מות <i>Achrai Moth</i>	Levit. xvi. 1-xviii. 30	80 = עדו <i>Iddo</i> כי כלו <i>for all</i> .
30	7	קדושים <i>Kedoshim</i>	" xix. 1-xx. 27	64 = מים וזהב <i>water of gold</i> , ונחה <i>and he pushed</i> .
31	8	אמור <i>Emor</i>	" xxi. 1-xxiv. 23	124 = אלעזר <i>Eluzai</i> .
32	9	בהר <i>Behar</i>	" xxv. 1-xxvi. 2	57 = לאחווה <i>for an inheritance</i> , חטיל <i>Hatil</i> .
33	10	בחוקותי <i>Bechukothai</i>	" xxvi. 3 xxvii. 34	78 = עוזה <i>Uzza</i> .*
34	1	במדבר <i>Bamidbar</i>	Numb. i. 1-iv. 20	159 = חלקיהו <i>Hilkiah</i> .
35	2	נשא <i>Nasa</i>	" iv. 21-vii. 89	176 = עמינדב <i>Amminadab</i> , עמוס <i>Amos</i> .
36	3	בהעלותך <i>Behalothecha</i>	" viii. 1-xii. 16	186 = מהלאל <i>Mahala-leel</i> .
37	4	שלח לך <i>Shelach Lecha</i>	" xiii. 1-xv. 41	119 = פלם <i>Pelet</i> .
38	5	קרח <i>Korach</i>	" xvi. 1-xviii. 32	95 = דניאל <i>Daniel</i> .
39	6	חוקת <i>Chucoth</i>	" xix. 1-xxii. 1	87 = עוזי <i>Uzzi</i> , ימואל <i>Jemuel</i> למירבא <i>to Medeba</i> .
40	7	בלק <i>Balak</i>	" xxii. 2-xxv. 9	104 = מנוח <i>Manoah</i> .
41	8	פנחס <i>Pinchas</i>	" xxv. 10-xxx. 1	163 = ואליפיהו <i>and Elephele</i> לזקק <i>for a nation</i> .
42	9	מכות <i>Matoth</i>	" xxx. 2 xxxii. 42	112 = עבל <i>Ebel</i> , יקב <i>a wine-vat</i> , נקי <i>pure</i> .
43	10	מסעי <i>Masai</i>	" xxxiii. 1 xxxvi. 13	132 = מחלה <i>disease</i> , חולה <i>malady</i> .
44	1	דברים <i>Debarim</i>	Deut. i. 1-iii. 22	105 = מלכיה <i>Malchiah</i> .
45	2	ואתחנן <i>Vaethechanan</i>	" iii. 23-vii. 11	122 = יועליה <i>Joelah</i> .*
46	3	עקב <i>Ekeb</i>	" vii. 12-xi. 25	111 = יעלא <i>Jaalah</i> , איק <i>Aik</i> .
47	4	ראה <i>Reeh</i>	" xi. 26-xvi. 17	126 = פלאיה <i>Pelaiah</i> .
48	5	שופטים <i>Shophetim</i>	" xvi. 18-xxi. 9	97 = סלוא <i>Salu</i> .
49	6	כי תצא <i>Ki Thetze</i>	" xxi. 10-xxv. 19	110 = עלי <i>Eli</i> .
50	7	כי תבוא <i>Ki Thabo</i>	" xxvi. 1-xxix. 8	122 = לעבדיו <i>to his servants</i> .
51	8	נציבים <i>Nitzabim</i>	" xxix. 9-xxx. 20	40 = לבבו <i>his heart</i> .
52	9	וישלח <i>Vayelach</i>	" xxxi. 1-80	80 = אביטוב <i>Abitub</i> .*
53	10	האזינו <i>Haazinu</i>	" xxxii. 1-62	52 = אביטל <i>Abital</i> .*
54	11	וזאת הנרקה <i>Vezoth Habracha</i>	" xxxiii. 1-xxxiv. 12	41 = אלי <i>my God</i> , געוול <i>Geuel</i> .

Though the exact date when the annual cycle obtained cannot be fixed, yet there can hardly be a doubt that it gradually developed itself in Palestine, and more especially in Babylon, about the time of Christ, and that it had not entirely supplanted the triennial cycle, as late as the thirteenth

century, A. D. Ancient authorities inform us that, side by side with the triennial cycle, there existed in some districts another mode for fixing the Pericopes. As the lessons were read, not only on the Sabbaths and Festivals, but also on Mondays and Thursdays, it was so arranged that the Pericope on Sabbath afternoon should begin where the morning lesson left off, and that the readings on Monday and Thursday should continue from where the Saturday afternoon Pericope ended.⁸² According to this system, therefore, $3 \times 9 = 27$ verses more were read each week, or more than twice as many as were read correspondingly in the triennial cycle, thus reducing the latter very nearly to the annual cycle. But as this system was in fact no system at all, since it was neither an annual, nor a biennial, nor a triennial cycle, it was soon reduced to the fifty-four hebdomadal lessons which are to be found in the present recensions of the Hebrew text. Hence we find R. Simeon b. Eleasar, who was a strong advocate of the annual system, declaring that Ezra instituted the reading of Levit. xxvi. 2–xxvii. 34 before the Feast of Pentecost, and Deut. xxviii. before New Year (*Megilla* 31 b),⁸³ which not only presupposes at that time the annual division into fifty-four sections, but, in a hyperbolical manner, ascribes its institution to the second Lawgiver.

Still, as we have already remarked, the annual cycle was by no means universal. Even in Maimonides' days there were congregations who refused to adopt it, and tenaciously clung to the old system (*Hilchoth Tephila* xiii. 1), whilst the celebrated Benjamin of Tudela tells us that when he was at Memphis (*circa* A. D. 1160) there were there "two synagogues; one of the congregation of Palestine, called the

⁸² תנו רבנן מקום שמפסיקין בשבת שחרית שם קורין במנחה במנחה שם קורין בושני בשני שם קורין בחמישי בחמישי שם קורין לשבת הבאה דברי רבי מאיר *Megilla* 31 b.

⁸³ תניא רבי שמעון בן אלעזר אמר עזרא תקן להם לישראל שיהיו קורין קלות שבחורה מהנים קודם עצרת ושבתמנחה תורה קודם ראש השנה *Megilla* 31 b.

Syrian, the other of Babylonian Jews. They followed different customs regarding the division of the Pentateuch into *Parashioth* and *Sedarim*. The Babylonians read one *Parsha* every week, as is the custom throughout Spain, and finished the whole Pentateuch every year, whereas the Syrians have the custom of dividing every *Parsha* into three *Sedarim*, and concluding the reading of the whole once in three years." (*The Itinerary*, i. 147, etc., ed. Asher.) All the MSS, however, as far as our examination of them has hitherto extended, give the annual division as exhibited in the Table.

The Divisions of the Psalter.— Besides the triennial cycle, in which the Psalter, in common with the other Hebrew Scriptures, is divided, this Book of Hymns, owing to the peculiar nature of its composition, has a division of its own, into separate Psalms, which, in some respects, are analogous to the open and closed sections in the Pentateuch. But as this division is different in the Massorah and in the correct MSS, from that of the present Hebrew text, it is desirable to point out in what it consists. According to ancient tradition, followed by the Massorah and many Codices, the Psalter consists of one hundred and forty-seven Psalms, and not of one hundred and fifty, as in the present printed text and versions. Ten of our Psalms, viz., i. and ii., xlii. and xliii., lxx. and lxxi., civ. and cv., cvi. and cvii., are five in the original, each of these pairs being joined together as one composition, whilst two Psalms are divided into four, viz., *a* lxxviii. 1–37, *b* 38–72, *c* cxviii. 1–4, *d* 5–9. The following table will show the variations.

Hebrew. Psalms i.	Hebrew Edition and English Version. Psalms i. and ii.
„ ii.—xl.	„ iii.—xli.
„ xli.	„ xlii.—xliii.

Hebrew.	Hebrew Edition and English Version.
Psalms xlii.—lxvii.	Psalms xlii.—lxix.
„ lxviii.	„ lxx.—lxxi.
„ lxix.—lxxiv.	„ lxxii.—lxxvii.
„ lxxv.	„ lxxviii. 1—37.
„ lxxvi.	„ „ 38—72.
„ lxxvii.—cxi.	„ lxxix.—cxiii.
„ cxii.	„ cxiv.—cxv.
„ cxiii.	„ cxvi.—cxvii.
„ cxiv.	„ cxviii. 1—24.
„ cxv.	„ „ 25—29.
„ cxvi.	„ cxix.
„ cxvii.—cxlvi.	„ cxx.—cl.

It is however to be remarked that all these variations are to be found together only in the *editio princeps* (Salonica, 1521), of that catena of traditional expositions of the Old Testament called *Jalkut* (יְלָקוּט, *collection*) which was compiled in the eleventh century by the celebrated Simeon Cara.³⁴ Now, immaterial as it may seem whether this book is divided into a hundred and forty-seven or a hundred and fifty Psalms, yet this apparently trite matter like many of the smaller phenomena in the Massorah, shows how the text has been tampered with to produce harmony when the traditional import of a passage has been misunderstood.

The Talmud distinctly tells us that Psalms i. and ii. are one Psalm, beginning with (אֲשֵׁרִי) “*blessed*” (Ps. i. 1) and ending with (אֲשֵׁרִי) “*blessed*” (Ps. ii. 2), and that such a beginning and ending were designedly made by David in his favourite Psalms.³⁵ As if to add more distinctiveness,

³⁴ For an account of R. Simeon Cara and this Midrash *Jalkut*, also called *Jalkut Shimoni*, after the compiler's name *Shimon*, see Kitto, *Cyclopædia of Biblical Literature*, s. v. CARA.

³⁵ Thus it is said אשרי האיש ולמה רגשו גוים הוא פרשה היא דאמר ר' שמואל בר נחמני כל פרשה שהיתה חביבה על דוד פתח בה באשרי וסיים בה באשרי פתח באשרי דכתיב אשרי האיש וסיים באשרי דכתיב אשרי כל חוסי בו *Blessed is the man* [= Ps. i.], and: *Why do the heathen rage* [= Ps. ii.] *are one Psalm, for, as*

we are told in another place that from the beginning of the Psalter to the words, "the Lord hear thee in the day of thy trouble" (Ps. xx. in the present recensions) are eighteen Psalms since *Beatus vir qui non abiit*, etc., and *Quare fremuerunt gentes?* are one Psalm.⁸⁶ Hence, in the ancient Hebrew MSS and the Codices of the Septuagint Psalms i. and ii. are one, and in harmony with this the quotation *υἱός μου εἶ σὺ, ἐγὼ σήμερον γεγέννηκά σε, thou art my son, this day have I begotten thee* (Acts xiii. 33) is said to be ἐν τῷ πρώτῳ ψαλμῷ γέγραπται, *written in the first Psalm*. When many of the Jews afterwards divided this and the other two Psalms into two, so as to obtain the round number of a hundred and fifty, not only was this division of the first Psalm into two introduced into many Codices of the Septuagint, but the passage in the New Testament was altered into ἐν τῷ ψαλμῷ τῷ δεύτῳ, *in the second Psalm*.

Some of the ancient sages also regarded Psalms ix. and x. as one, for which reason they are joined together in the Septuagint and Vulgate, and in a few Codices. But the general tradition in Palestine was against it, and hence this junction only obtained currency in Alexandria. In

R. Samuel b. Nachmani said, every Psalm which was his favourite David began with 'blessed,' and ended with 'blessed.' He began with 'blessed,' for it is written 'Blessed is the man' (Ps. i. 1) and ended with 'blessed,' because it is written, 'Blessed be all who trust in him.' BERACHOTH 9 b-10 a.

⁸⁶ To the question, Why there are *Eighteen Benedictions* in the Morning Prayer אמר ר' יהושע בן לוי כנגד שמנה עשר כומורות שכתוב מראשו של חלים עד יעקב ידוע ביום צרה אם יאמר לך אדם חשבה עשר הן אמור לו למה רצו לית די מיתן *R. Joshua b. Levi answered, They correspond to the eighteen which are from the commencement of the Psalter to the words, 'the Lord hear thee' [Ps. xx.] If any one should tell thee there are nineteen, reply to him, Why do the heathen rage [= Ps. ii.] is not a separate Psalm (JERUSALEM TAANITH ii. 2). Christian authorities confirm this fact. A Scholion, from Origen and Eusebius says that Psalms i. and ii. ἐν τῷ Ἑβραϊκῷ συνημμένοι. To the same effect is the remark of Apollinarius,*

Ἐπιγραφῆς ὁ ψαλμὸς εὐρέθη δίχα,
Ἡνωμένος δὲ τοῖς παρ' Ἑβραίοις στίχοις.

Comp. Delitzsch, *Comment on Ps. i.*

harmony with the notion of the sages Psalm xlii. and xliii. are joined together as one composition, and though this tradition does not seem to have found its way to Alexandria, as is evident from the fact that in the Septuagint and Vulgate they form distinct Psalms, and that they have even supplied a title to Psalm xliii., which has none in the Hebrew, yet it was known to Eusebius, who distinctly remarks that "this Psalm (xliii.) has no superscription by the Hebrews, for which reason it has also no title among other interpreters, and that it is indeed a continuation of the former Psalm (xlii.) is evident from the similarity of diction and affinity of sentiments which are common to both."⁸⁷ Hence in many Codices these two Psalms form one.

Ps. lxxi. also exhibits a variation between the Palestinian tradition and the Alexandrian. According to the Palestinians, Psalms lxx. and lxxi. are one composition, and Psalm lxxi. of the present Hebrew text has therefore no superscription. Hence, in harmony with the above junctures, Psalms lxx.—lxxi. are Psalm xlviii. in the Midrash *Jalkut*. In the Septuagint, however, which the Vulgate follows, the two Psalms are not only distinct, but Psalm lxxi. has the following lengthy title, "By David, sung by the sons of Jonadab, and the former captives."⁸⁸

Psalm lxxviii. was divided into two compositions, viz., 1—37, and 38—72, and although this division again exhibits a variation between the Palestinians and the Alexandrians, inasmuch as it is not adopted in the Septuagint, and although it is not to be found in the present Hebrew Codices, yet

⁸⁷ Ανεπίγραφος παρ' Εβραίοις ὁ Ψαλμός, διὸ οὐδὲ παρὰ τοῖς λοιποῖς ἐρμηνευταῖς ἐπιγραφὴν ἔχει· ἀλλὰ καὶ ὅτι μέρος ἔοικεν εἶναι τοῦ πρὸ αὐτοῦ δεδηλωταί ἕκ τε τῶν ὁμοίων ἐν ἀμφοτέροις λόγων, καὶ ἐκ τῆς ἐμφοροῦς διανοίας. Eusebius, in Origen's *Hexapla*, Ps. xlii. [= xliii.]

⁸⁸ Τῷ Δαυὶδ, υἱῶν Ἰωναδάβ καὶ τῶν πρώτων αἰχμαλωτισθέντων, and the Vulgate, *Psalmus David, filiorum Jonadab et priorum captivorum*.

there can be no doubt about the fact. In the Massoretic Triennial List it is still divided, and the Talmud (*Kiddushin* 30 a) uses this division, viz., the first verse of the second part, or verse 38, according to the present arrangement, to indicate the total number of verses in the Psalter. That verses 38–72 formed a distinct Psalm, is moreover evident from the fact that it was recited with Deut. xxviii. 58–59, xxix. 8, during the administration, upon delinquents, of the forty stripes save one (*Mishna Maccoth* iii. 14), to which the Apostle was subjected five times (2 Cor. xi. 24). Hence Psalm lxxviii. 1–37 of the present text is Psalm lxxv., Psalm lxxviii. 38–72 is Psalm lxxvi., whilst Psalm lxxix. is lxxvii. Hence too Psalm civ. of the present text is distinctly called in the Talmud and Midrashim cii., where it is remarked that it is the one hundred and third Psalm, viz., civ. of the present division, where the expression *Hallelujah* occurs for the first time as an ejaculation of praise.⁸⁹

Psalms cxiv. and cxv. were joined together as one composition. This Palestinian practice found its way into Alexandria, and hence the two Psalms are also one composition in the Septuagint, Syriac, Arabic, and Æthiopic. Accordingly, Psalms cxiv. and cxv. of the present text constituted Psalm cxii., and what is now Psalm cxvi. was, according to the traditional division, cxiii.

Psalm cxviii. was divided into two compositions, viz., 1–4 was one Psalm, and 5–29 was another Psalm, a division still preserved in the Vienna Codex. Accordingly, the first part of Psalm cxviii. of the present numbering was, according to tradition, Psalm cxiv., and the second part Psalm cxv. Hence, what is now Psalm cxix. should be Psalm cxvi., and the last Psalm, *i. e.*, cl., is cxlvii.

⁸⁹ מִנְּחָה וּשְׁנַיִם פְּסַלְמִים אָמַר דָּוִד וְלֹא אָמַר הַלְלוּיָהּ *David composed one hundred and two Psalms before he uttered the word Hallelujah.* Comp. *Berachoth* 9 b. *Midrash* on Levit. cap. iv., *Midrash* on the Psalms cap. cix., *Midrash Jalkut* on Ps. civ.

The Rabbins, who always endeavoured to find a mnemonical sign for every important number, have therefore declared that "the Psalter consists of one hundred and forty-seven hymns, according to the years of our father Jacob."⁴⁰

It is necessary to remark that, owing to liturgical arrangements, two portions of the Psalter are quoted in the Massorah by distinct titles. During the second Temple, when the service was reorganised, the Psalter, or the National Hymn Book, as it may properly be designated, was largely used in the worship of the Sanctuary. Passing over as beyond the scope of this Essay, the several portions which were used on different occasions we have to notice the group of Psalms called *Hallel* (הלל). The ordinary *Hallel*, or ὕμνος, as it is called in the New Testament (Matt. xxvi. 30), consists of Psalms cxiii. — cxviii. It was chanted twenty times in the year, during the sacrifice, viz., on the first and second day of the Feast of Passover (פסח), on the Feast of Pentecost (שבועות) the eight days of the Feast of Tabernacles (סוכות), and eight days of the Feast of Dedication (הניוכה).⁴¹ On twelve days out of the twenty, viz., at the sacrifice of the first and second Pesach, of the first day of Pesach, of the Feast of Pentecost, and of the eight days of Tabernacles, the flute was played before the altar when the *Hallel* was chanted; whilst, after the morning sacrifice, during the eight days of the Feast of Dedication, it was chanted without this accompaniment. From the fact that this *Hallel* recounts the Exodus from Egypt, it is sometimes called the *Egyptian Hallel* (הלל המצרי), in contradistinction to the *Great Hallel* (הלל הנדול), which consists of Psalm

⁴⁰ מאה וארבעים ושבעה מזמורות בתהלים כנגד שנותיו של יעקב אבינו Comp. *Jerusalem Sabbath* cap. xvi., *Tosephta* on *Babylon Pessachim* 117 a, *Midrash Tillim* cap. civ., *Midrash Jalkut* on Ps. xxii., *Sopherim* xvi. 11, and see also Fürst, *Der Kanon des Alten Testaments*, p. 71, etc., Leipzig, 1868.

⁴¹ Comp. *Mishna Pesachim* v. 7, *Succa* iv. 8, *Taanith* iv. 4, *Erachin* ii. 3.

xxxxvi., and is so called because it greatly abounds with responses of praise, repeating no less than twenty-six times the same ejaculation. Some, however, add to the latter the Pilgrim Psalms (*Pesachim* 118 *a*). It is the ordinary *Hallel* which was sung by Christ and his disciples at the conclusion of the Passover supper, and is chanted by the Israelites on the same occasion to the present day,⁴² which the Massorah quotes by the Chaldee name הלילא. Thus, on 2 Sam. xxii. 5, the Massorah remarks that “the word אֶפְפִּינִי, *surrounded me*, occurs three times, viz., 2 Sam. xxii. 5, Ps. xviii. 5, and the parallel passage in the *Hallel*,” i. e., Ps. cxvi. 3.⁴³

Another portion of the Psalter which has a separate title is Ps. cxix. This Psalm is quoted by the title “*Great Alphabet*” (אֵ"ב רבתי), because the hundred and seventy-six verses contained therein are divided into twenty-two groups; and the groups not only answer to the number, and respectively begin with one of the letters of the Hebrew alphabet, but every verse in each group conforms to it. Thus the eight verses of the first group begin each with *Aleph*, the first letter; all the eight verses of the second group begin with *Beth*, the second letter; and so all through the twenty-two groups.

Piska. — Returning to the breaks in the text of the Hebrew Scriptures, we have to notice the *Piska*. In no less than thirty-one passages, there are, in the most acceptable editions, breaks or vacant spaces in the middle of the verses, with a little circle occupying the centre of the vacancy. They are as follows—

⁴² Dean Alford, in his Greek New Testament (Matt. xxvi. 30), not only confounds the *Egyptian Hallel* chanted by the Jews at the Paschal supper with the *Great Hallel*, but erroneously says that the latter consists of Ps. cxv.-cxviii.

⁴³ It is remarkable that Buxtorf should have mistaken the meaning of וְהִלֵּא and applied the Massoretic expression וְהִלֵּא to the whole Psalter. Comp. *Tiberias*, cap. vi. Joseph Eshve has copied the same error into his *Mebin Chidoth* section ii.

1 Gen. xxxv. 22.	12 1 Sam. xvii. 37.	23 2 Sam. xviii. 2.
2 Numb. xxv. 19.	13 1 Sam. xxi. 10.	24 2 Sam. xxi. 1.
3 Deut. ii. 8.	14 1 Sam. xxiii. 2.	25 2 Sam. xxi. 6.
4 Josh. iv. 1.	15 1 Sam. xxiii. 11.	26 2 Sam. xxiv. 10.
5 Josh. viii. 24.	16 2 Sam. v. 2.	27 2 Sam. xxiv. 11.
6 Judges ii. 1.	17 2 Sam. v. 19.	28 2 Sam. xxiv. 13.
7 1 Sam. x. 22.	18 2 Sam. vi. 20.	29 1 Kings xiii. 20.
8 1 Sam. xiv. 19.	19 2 Sam. vii. 4.	30 Jer. xxxviii. 28.
9 1 Sam. xiv. 36.	20 2 Sam. xii. 13.	31 Ezekiel iii. 16.
10 1 Sam. xvi. 2.	21 2 Sam. xvi. 13.	
11 1 Sam. xvi. 12.	22 2 Sam. xvii. 14.	

In the foot notes to each of these passages we find the remark, “a hiatus, or section, in the middle of the verse.”

Before entering into an investigation as to the meaning of the word *Piska*, and its critical importance, it is necessary to remark that I do not know where the modern editors of the Hebrew Scriptures obtained the List of *Piskas*. It is nowhere given in the Massorah Magna. Even the Massorah Parva, which alone mentions in two places a sum total of the instances, marks seven passages only as belonging to this Rubric.⁴⁴ Indeed one of the seven of the passages distinctly marked in the Massorah Parva, as included in this category (viz., Gen. iv. 8), is rejected by modern critics, and is not contained in the above List. Nor have I been able to find an authoritative List of these *Piskas* in any of the MSS. which I have hitherto collated. It is true that in some Codices I have

⁴⁴ The seven passages noted by the Massorah Magna in which *Piska* occurs in the middle of a verse are, Gen. iv. 8, xxxv. 22; Josh. iv. 1; Judg. ii. 1; 1 Sam. xxiii. 2, 11; Ezek. iii. 16. The two places in which the sum total is mentioned are Gen. iv. 8, where it is remarked פסוק במצעת פסוק twenty-eight verses, wherein there is a break in the middle of the verse, whilst Gen. xxxv. 22, where it is remarked, פסוק כה פסוקי פסוקי כצווי פסוק twenty-five verses in which there is a break in the middle of the verse, which is evidently a misprint for כ"ח twenty-eight. Those who have had the slightest experience in the collation of MSS., or in printing, know how frequently the letters ה, five, and ח, eight, are exchanged, and it is therefore perfectly surprising that Kennicott should adduce this as one of the two instances in which the Massorah contradicts itself, in order to show how “very imperfect, contradictory, interpolated, mutilated, etc.,” it is. *The state of the Printed Hebrew Text of the Old Testament*. Dissertation the second, pp. 275, etc., Oxford, 1759.

found a vacant space, but the passages with the vacant space are very few, and have not even the remark, "*here is a Piska in the middle of the verse*" (פסקא באמצע פסוק), which is to be found as a gloss in the margin of our modern editions in every one of the thirty-one passages. Thus, for instance, in the MSS. of the British Museum, Codex No. 1528 (Harl.) a vacant space of about two letters, without any marginal remark whatever, is to be found in ten passages only, viz.,

1 Gen. xxxv. 22.	5 1 Sam. x. 22.	9 1 Kings xiii. 20.
2 Numb. xxv. 19.	6 1 Sam. xiv. 36.	10 Ezek. iii. 16.
3 Deut. ii. 8.	7 1 Sam. xvi. 12.	
4 Josh. iv. 1.	8 2 Sam. xxiv. 10	

In Codex No. 5710-11 (Harl.), which is most carefully written, with a very elaborate Massorah, both Magna and Parva, there are seven instances only, viz.,

1 Gen. xxxv. 22.	4 Josh. iv. i.	7 1 Kings xiii. 20.
2 Numb. xxv. 19.	5 1 Sam. x. 22.	
3 Deut. ii. 8.	6 1 Sam. xvi. 12.	

In this Codex what are marked as Nos. 1 and 3, *i. e.*, in Gen. xxxv. 22, Numb. xxv. 19, the space is occupied by the word פתוחה, *Open Section*, written out fully. No. 3, *i. e.*, in Deut. ii. 8, the space is occupied by the word סתומה, *Closed Section*, also written out fully. Against No. 6, *i. e.*, 1 Sam. xvi. 12, is placed in the margin כ"ח, which evidently indicates that there are twenty-eight such instances; whilst in Nos. 4, 5, and 7, *i. e.*, Josh. iv. 1, 1 Sam. x. 22, 1 Kings xiii. 20, there is simply a vacant space, without any marginal remark whatever.

In Codex No. 9403 (Add.) there are three instances only given, viz., Gen. xxxv. 22, against which is written in the margin, כאן פרש פתו, *there is here an open section*; Numb. xxv. 19, where the space is occupied by פ, the usual abbreviation of פתוחה, marking it as *Open Section*; and Deut. ii. 8, where the space is occupied by ס, the abbrevia-

tion of סתומה, marking it as an *Open Section*. In Codex No. 10455 (Add.) Numb. xxv. 19 has alone vacant space. But none of these MSS. includes Gen. iv. 8 in the List of *Piskas*, nor even takes any notice of it. The only Codex which notices it is No. 9401-2 (Add.) Here it is remarked in the margin, against the passage in question, פרינז. The import of this expression we shall immediately explain. With these facts before us, we have no difficulty in explaining the meaning of the word *Piska*, nor in ascertaining its critical significance. We see, in the first place that very little importance was attached to these *Piskas*. Hence, while the Lists of the Majuscular and Minuscular Letters, of the Inverted and Suspended Letters, of the Peculiarly Pointed Letters, and of a thousand seemingly trite matters connected with the text, have been minutely registered and carefully conserved, a catalogue of the *Piskas* is nowhere to be found, and the MSS. followed no rule in the adoption or omission of the *Piskas*. In the few places wherein they are to be found in the MSS., they indicate, beyond the shadow of a doubt, a division of sections which obtained in olden times, prior to the division of the text into verses as we now have it, and which was afterwards neglected because the circumstances which necessitated the *Piskas* ceased to exist.

According to the Aramaic the term פסקא, from פסק, to cut off, to leave off, simply denotes *pause, paragraph, section*; and the Massoretic phrase, פסקא באמצע פסוק, signifies a *section in what is now the middle of a verse*. And if the passages in which these* sections are marked in the middle of the verse are examined, it will be seen that the two hemistiches between which this mark is placed are respectively complete in themselves. The only exception to this is Gen. iv. 8. But it must be borne in mind that this is not included in the List of *Piskas* in the middle of verses in any of

the MSS. I have examined; and that the solitary Codex which notices it remarks against it in the margin פרינט, which is an abbreviation of פרינטא, and is either the Greek φράγμα, a shutting-up, a paragraph, a break, or more probably the Latin FRAGMEN, a fracture, a piece broken off, a hiatus.⁴⁵ It is therefore surprising that Kennicott, following the example of Leusden and others, should have argued from Gen. iv. 8, which is not included in the List of *Piskas*, and which is marked quite differently, that פסקא denotes a hiatus, an omission; and that wherever the Massorites left such a vacant space, and made the remark in the margin, “here is a *Piska* in the middle of the verse,” they intended to indicate thereby a deficiency, or that some word or words had dropped out of the text.

Chapters.—The Massoretic chapters must not be confounded with those which are to be found in the ordinary editions, and which were first introduced into the Rabbinic Bible (Venice, 1516–17), together with the divisions of the four books into eight (*i. e.*, Samuel, Kings, Ezra and Chronicles), by Felix Pratensis, who copied it from the Hebrew Concordance of R. Isaac Nathan.⁴⁶ The chaptral division of the Massorah, like the Pericopal cycle, is purely liturgical. As seven persons read the hebdomadal lessons, each Pericope was divided into seven chapters, so that every prælector had a separate portion to read. The discontinuance of the Triennial cycle renders it now impossible to give this more ancient chaptral division. If the List of the

⁴⁵ Though Jacob b. Chajim Ibn Adonijah, the first editor of the Massorah, and perhaps also some of the Codices from which he compiled his edition, regarded Gen. iv. 8 as one of the *Piskas*, and although Levita espoused the same opinion (*Massoreth Ha-Massoreth*, p. 262, ed. Ginsburg), yet it is now certain that this passage does not belong to the category. Indeed R. Norzi, the celebrated Biblical critic, already pointed out the mistake of including Gen. iv. 8 in this List, at the beginning of the seventeenth century, in his *Minchas Shai*, and expressed his surprise at Levita falling into this blunder.

⁴⁶ *Comp. supra*, p. 259, note 7.

two hundred and eighty-nine Pericopes into which the Prophets and Hagiographa are divided be correct, and if the mode of reading these lessons was the same as the manner in which the Law was read, these two groups of the Hebrew Scriptures consisted of two thousand and twenty-three chapters ($289 \times 7 = 2023$);⁴⁷ whilst the hundred and fifty-five Pericopes of the Law had one thousand and eighty-five chapters ($155 \times 7 = 1085$). Hence the Old Testament had anciently three thousand one hundred and eight chapters. Through the discarding, however, of the Triennial system, and the discontinuance of parceling out the Prophets and Hagiographa into hebdomadal lessons, all marks of the chaptral divisions in these books have entirely disappeared, so that the chapters of the Annual cycle of the Pentateuch alone have been preserved. According to this system, Genesis, which, as we have seen, yields twelve Pericopes, has, therefore, eighty-four chapters; Exodus, eleven Pericopes, and seventy-seven chapters; Leviticus, ten Pericopes, and seventy chapters; Numbers, ten Pericopes, and seventy chapters; and Deuteronomy, eleven Pericopes, and seventy-seven chapters; making in all three hundred and seventy-eight chapters, as follows:—

TABLE V.

THE CHAPTERS OF THE PENTATEUCH ACCORDING TO THE PERICOPE.

GENESIS.			GENESIS.			GENESIS.			GENESIS.		
1	i.	1-13	11	viii.	15-ix. 7	21	xvii.	8-27	31	xxiv.	10-26
2	"	14-23	12	ix.	8-17	22	xviii.	1-14	32	"	27-52
3	"	24-ii. 8	13	"	18-x. 32	23	"	15-33	33	"	53-67
4	ii.	4-iii. 21	14	xi.	1-32	24	xix.	1-20	34	xxv.	1-11
5	iii.	22-iv. 26	15	xii.	1-13	25	"	21-xxi. 4	35	"	12-18
6	v.	1-24	16	"	14-xiii. 4	26	xxi.	5-21	36	"	19-xxvi. 5
7	"	25-vi. 8	17	xiii.	5-18	27	"	22-34	37	xxvi.	6-12
8	vi.	9-22	18	xiv.	1-20	28	xxii.	1-23	38	"	13-22
9	vii.	1-16	19	"	21-xv. 6	29	xxiii.	1-16	39	"	23-29
10	"	17-viii. 14	20	xv.	7-xvii. 7	30	"	17-xxiv. 9	40	"	30-xxvii. 27

⁴⁷ This computation does not include Ruth, the Song of Songs, and Lamentations, as these books are entirely omitted in the printed Triennial List. *Vide supra*, p. 324.

TABLE V.—*continued.*

GENESIS.	EXODUS.	EXODUS.	LEVITICUS.
41 xxvii. 28-xxviii. 4	91 v. 1-vi. 1	144 xxxiii. 17-28	194 xiv. 54-xv. 15
42 xxviii. 5-9	92 vi. 2-18	145 xxxiv. 1-9	195 xv. 16-28
43 " 10-22	93 " 14-28	146 " 10-26	196 " 29-33
44 xxix. 1-17	94 " 29-vii. 7	147 " 27-35	197 xvi. 1-17
45 " 18-xxx. 18	95 vii. 8-viii. 6	148 xxxv. 1-20	198 " 18-24
46 xxx. 14-27	96 viii. 7-18	149 " 21-29	199 " 25-34
47 " 28-xxxi. 16	97 " 19-ix. 16	150 " 80-xxxvi. 7	200 xvii. 1-7
48 xxxi. 17-42	98 ix. 17-35	151 xxxvi. 8-19	201 " 8-xviii. 5
49 " 43-xxxii. 2	99 x. 1-11	152 " 20-xxxvii. 16	202 xviii. 6-21
50 xxxii. 3-12	100 " 12-23	153 xxxvii. 17-29	203 " 22-30
51 " 13-30	101 " 24-xi. 8	154 xxxviii. 1-20	204 xix. 1-14
52 " 31-xxxiii. 5	102 xi. 4-xii. 20	155 " 21-xxxix. 1	205 " 15-23
53 xxxiii. 6-20	103 xii. 21-28	156 xxxix. 2-21	206 " 23-32
54 xxxiv. 1-xxxv. 11	104 " 29-51	157 " 22-32	207 " 33-37
55 xxxv. 12-xxxvi. 13	105 xiii. 1-16	158 " 33-34	208 xx. 1-7
56 xxxvi. 20-43	106 " 17-xiv. 8	159 xl. 1-16	209 " 8-22
57 xxxvii. 1-11	107 xiv. 9-14	160 " 17-27	210 " 23-27
58 " 12-22	108 " 15-25	161 " 28-31	211 xxi. 1-16
59 " 23-36	109 " 26-xv. 26		212 " 17-xxii. 16
60 xxxviii. 1-30	110 xv. 27-xvi. 10	LEVITICUS.	213 xxii. 17-33
61 xxxix. 1-6	111 xvi. 11-36	162 i. 1-13	214 xxiii. 1-22
62 " 7-23	112 xvii. 1-16	163 " 14-ii. 6	215 " 23-32
63 xl. 1-23	113 xviii. 1-12	164 ii. 7-16	216 " 33-44
64 xli. 1-14	114 " 13-23	165 iii. 1-17	217 xxiv. 12-3
65 " 15-38	115 " 24-27	166 iv. 1-26	218 xxv. 1-13
66 " 39-52	116 xix. 1-6	167 " 27-v. 10	219 " 14-18
67 " 53-xlii. 18	117 " 7-19	168 v. 11-26	220 " 19-24
68 xlii. 19-xliii. 15	118 " 20-xx. 14	169 vi. 1-11	221 " 25-28
69 xliii. 16-29	119 xx. 15-23	170 " 12-vii. 10	222 " 29-38
70 " 30-xliv. 17	120 xxi. 1-19	171 vii. 11-38	223 " 39-46
71 xliv. 18-30	121 " 20-xxii. 8	172 viii. 1-13	224 " 47-xxvi. 2
72 " 31-xlv. 7	122 xxii. 4-26	173 " 14-21	225 xxvi. 3-5
73 xlv. 8-18	123 " 27-xxiii. 5	174 " 22-20	226 " 6-9
74 " 19-27	124 xxiii. 6-19	175 " 30-36	227 " 10-46
75 " 28-xlvi. 27	125 " 20-35	176 ix. 1-16	228 xxvii. 1-15
76 xlvi. 28-xlvii. 10	126 " 26-xxiv. 18	177 " 17-23	229 " 16-21
77 xlvii. 11-27	127 xxv. 1-16	178 " 24-x. 11	230 " 22-28
78 " 28-xlviii. 9	128 " 17-40	179 x. 12-15	231 " 29-34
79 xlviii. 10-16	129 xxvi. 1-14	180 " 16-20	
80 " 17-22	130 " 15-30	181 xl. 1-32	NUMBERS.
81 xlix. 1-18	131 " 31-37	182 " 33-47	232 i. 1-19
82 " 19-26	132 xxvii. 1-8	183 xii. 1-xiii. 5	233 " 20-54
83 " 27-1. 20	133 " 9-19	184 xiii. 6-17	234 ii. 1-34
84 l. 21-26	134 " 20-xxviii. 12	185 " 18-23	235 iii. 1-13
	135 xxviii. 13-30	186 " 24-28	236 " 14-39
EXODUS.	136 " 31-43	187 " 29-39	237 " 40-50
85 i. 1-17	137 xxix. 1-18	188 " 40-54	238 iv. 1-20
86 " 18-ii. 10	138 " 19-37	189 " 55-59	239 " 21-37
87 ii. 11-25	139 " 38-46	190 xiv. 1-12	240 " 38-49
88 iii. 1-15	140 xxx. 1-10	191 " 13-20	241 v. 1-10
89 " 16-iv. 17	141 " 11-xxxi. 17	192 " 21-32	242 " 11-vi. 27
90 iv. 18-31	142 xxxi. 18-xxxiii. 11	193 " 33-53	243 vii. 1-41
	143 xxxiii. 12-16		

TABLE V.—*continued*

NUMBERS.			NUMBERS.		DEUTERONOMY.			DEUTERONOMY.							
244	vii.	42-71	279	xxiii.	27-xxiv.	13	811	iv.	41-49	846	xxvi.	16-19			
245	"	72-89	280	xxiv.	14-xxv.	9	812	v.	1-18	847	xxvii.	1-10			
246	viii.	1-14	281	xxv.	10-xxvi.	4	813	"	19-vi.	8	848	"	11-xxviii.	6	
247	"	15-26	282	xxvi.	5-51		814	vi.	4-25		849	xxviii.	7-69		
248	ix.	1-14	283	"	52-xxvii.	5	815	vii.	1-11		850	xxix.	1-8		
249	"	15-x.	10	284	xxvii.	6-23	816	"	12-viii.	10	851	"	9-11		
250	x.	11-34	285	xxviii.	1-15		817	viii.	11-ix.	3	852	"	12-14		
251	"	35-xi.	29	286	"	16-xxix.	11	818	ix.	4-29	853	"	15-28		
252	xi.	30-xii.	15	287	xxix.	12-xxx.	1	819	x.	1-11	854	xxx.	1-6		
253	xiii.	1-20	288	xxx.	2-17		820	"	12-22		855	"	7-10		
254	"	21-xiv.	7	289	xxxi.	1-12		821	xi.	1-9	856	"	11-14		
255	xiv.	8-25	290	"	13-24		822	"	10-25		857	"	15-20		
256	"	26-xv.	7	291	"	25-41		823	"	26-xii.	10	858	xxxi.	1-3	
257	xv.	8-16	292	"	42-54		824	xii.	11-28		859	"	4-6		
258	"	17-26	293	xxxii.	1-19		825	"	29-xiii.	19	860	"	7-9		
259	"	27-41	294	"	20-42		826	xiv.	1-21		861	"	10-13		
260	xvi.	1-13	295	xxxiii.	1-10		827	"	22-29		862	"	14-19		
261	"	14-19	296	"	11-49		828	xv.	1-18		863	"	20-24		
262	"	20-xvii.	8	297	"	50-xxxiv.	15	829	"	19-xvi.	17	864	"	25-30	
263	xvii.	9-15	298	xxxiv.	16-29		830	xvi.	18-xvii.	13	865	xxxii.	1-6		
264	"	16-24	299	xxxv.	1-8		831	xvii.	14-20		866	"	7-13		
265	"	25-xviii.	20	300	"	9-34		832	xviii.	1-5	867	"	13-18		
266	xviii.	21-32	301	xxxvi.	1-13		833	"	6-13		868	"	19-28		
267	xix.	1-17	DEUTERONOMY.				834	"	14-xix.	13	869	"	29-39		
268	"	18-xx.	6					835	xix.	14-xx.	9	870	"	40-43	
269	xx.	7-13					836	xx.	10-xxi.	9	871	"	44-52		
270	"	14-21	302	i.	1-11		837	xxi.	10-21		872	xxxiii.	1-7		
271	"	22-xxi.	9	303	"	12-21		838	"	22-xxii.	7	873	"	8-12	
272	xxi.	10-20	304	"	22-38		839	xxii.	8-xxiii.	7	874	"	13-17		
273	"	21-xxii.	1	305	"	39-ii.	1	840	xxiii.	8-24	875	"	18-21		
274	xxii.	2-12	306	ii.	2-30		841	"	25-xxiv.	4	876	"	22-26		
275	"	13-20	307	"	31-iii.	14	842	xxiv.	5-13		877	"	27-29		
276	"	21-38	308	iii.	15-22		843	"	14-xxv.	19	878	xxxiv.	1-12		
277	"	39-xxiii.	12	309	"	23-iv.	4	844	xxvi.	1-11					
278	xxiii.	13-26	310	iv.	5-40		845	"	12-15						

These chapters are indicated in every Pericope of some editions of the Pentateuch, especially those containing the Chaldee Paraphrases and Rashi's Commentary, etc., by the numbers *two* (שני), *three* (שלישי), *four* (רביעי), *five* (חמישי), *six* (שישי), and *seven* (שביעי), fully written out. The last three or four verses of the seventh chapter in each hebdomadal lesson are now assigned to the one called up to the lectern to the reading of the *Haphtara* (הפטרה), or the lesson from the Prophets. Hence the expression *Maphtir* (מפטיר), which is to be found before these verses. That these chapters are omitted

in the ordinary editions, and especially in those published by the Bible Society, only shows the inconsistency of the editors, since these chaptral divisions are an essential part of the hebdomadal lessons, which are indicated at the top of every page, in these very editions. Surely the insertion of one part of the lectionary demands the insertion of the other. It must here be remarked that there is a variation in these chaptral divisions between the *Sephardim* (ספרדים), or the Portuguese, and the *Ashkenazim* (אשכנזים), or the Polish, German, French, etc., communities, who may be regarded to represent the ancient Palestinian and Babylonian, or Western and Eastern usage. But the difference is very slight.

As to the present chaptral division, which was introduced into Bomberg's Hebrew Scriptures by Felix Pratensis, though it is no part of the Massorah, yet as Ibn Adonijah, the first editor of this critical apparatus, has incorporated it into the Massoretic numberings at the end of each book of the Bible, some notice must be taken of it. For, whatever may be said as to the theory about the origin of the sections, there can be no doubt that they never interrupt the sense. It would therefore be only reasonable to expect that wherever there is a chaptral break it should coincide with the sectional division. But this is so far from being the case, that a more unfortunate and senseless splitting up of the text could hardly have been devised by an intelligent student of the original.

In corroboration of our remark, we shall simply give the instances from the Pentateuch. Gen. ii. begins three verses too soon; cap. vi. leaves one verse of the section behind; cap. ix. interrupts the historical connection, and ought either to commence eight verses sooner or seven verses later; cap. xxviii. should have begun nine verses later; cap. xxxi. not only breaks into the middle of the narrative, but begins without an antecedent, whereas the Palestinian or Triennial division properly commences three verses further; cap.

xxxii. begins three verses before the section. Both cap. xliii. and xliv. commence without a subject. Quite as unfortunate are the breaks in Exodus. Cap. iv. begins with an answer; cap. vi. begins a verse too soon, whilst xxii. and xxiii. commence respectively a verse too late; cap. xxxvi. has detached a verse from the context, which it absurdly connects with the address of Moses. This senseless chaptral division has misled several versions, amongst which is the Authorised version, in the translation of this verse. As this verse is intimately connected with the preceding, the *Vav* in וַיַּעַשׂ is conversive, and the word ought to be rendered, *that Bezaleel make*, as the Jerusalem Targum, Kalisch, Keil, etc., have it, and not "*then wrought Bezaleel.*" Cap. xxix. begins a verse too soon.

In Leviticus, cap. x. breaks into historic connection; the Palestinian or Triennial division properly begins seven verses later on; cap. xxvi. commences two verses too soon. In Numbers, cap. xiv. interrupts the thread of the narrative, whereas the Palestinian section rightly begins ten verses further on; cap. xxii. again, is one verse too soon; cap. xxiii. breaks most violently into the connection, and ought to have begun three verse earlier, whilst cap. xxx. is a verse too soon. In Deuteronomy, cap. ii. commences one verse too soon, cap. iii. seven verses too late, contrary to the section, in opposition to the Palestinian division, and against the historic connection; cap. vi. is three verses too soon; cap. x. interrupts the connection; cap. xii. is four verses too late, whilst cap. xiii. most senselessly begins a verse too soon.

Verses.—The last, but most important, division of the text is the versicular. As this partition of the Hebrew Scriptures has, with some slight variations, been introduced into all versions, both ancient and modern, Catholic and Protestant; and moreover, as in many instances it fixes and affects the sense; we cannot lay too much stress upon this department of the

Massoretic labours. Happily the Massorah has most minutely conserved and registered the number of verses in each book of the Old Testament. Indeed, as regards the Pentateuch, which, as we have already seen, has been shielded in an especial manner, the verses are counted and registered in a double form; and these two systems check each other. The first, and most probably the older, List of verses in the Pentateuch is the one appended to each book. Besides the verses and the middle verses, this List also gives the number of the Annual (פרשיות) and Triennial (סדרים) Pericopes, and of chapters which Jacob b. Chajim for the first time inserted, as well as the open and closed sections in each of the Five Books of Moses. The second List or rather mode, of counting the verses in the Pentateuch, is the Pericopal. After the Law of Moses was divided into fifty-four hebdomadal lessons, the number of verses in each Pericope was counted, and appended to each with a mnemonical sign, which is generally a proper name, consisting of the same numerical value as the number of verses in the lesson in question. In the MSS. both the letters indicating the number of verses and the mnemonical sign are distributed between, and sometimes inside the three great *Pes* (פ פ פ), or *Samechs* (ס ס ס), which always mark an open or closed section at the end of each Pericope; and Biblical students who are not initiated into the kleptography of the Massorah are greatly puzzled to decipher the import of these mysterious signs.

As I have already given this List of Numbers and Mnemonical Signs in Table IV. of the Annual Cycle, I shall here simply describe its textual condition in the printed editions of the Bible, and the additions and corrections I have made from various MSS. The following Pericopes have no mnemonical signs in the editions. Pericopes 6 (תולדות) and 12 (ויחי), in Genesis; Pericope 11 (פקודי), in Exodus; Pericope 10 (בהקדתי) in Leviticus, and Pericope 9 (וילך), in

Deuteronomy. These I have added from the MSS. Moreover, Pericope 9 in Deuteronomy is marked as having seventy verses, and the mnemonical sign is אֲדֹנִיָּה, *Adoniah*, which is numerically the same in value. But this hebdomadal section has only thirty verses, and the mistake has evidently arisen through the omission of the mnemonical sign in this section, and through the joining of this with the preceding lesson, as these two, viz., Nos. 51 and 52, are read together in those years which have not fifty-four Sabbaths. (Comp. *supra*, p. 333.) The following is the List of verses as appended to each book of the Bible.

TABLE VI.

NUMBER OF VERSES IN EACH BOOK OF THE BIBLE.

THE LAW.		
Book.	Total No. of Verses.	Middle Verse.
Genesis	1534	xxvii. 40
Exodus	1209	xxii. 28
Leviticus	859	xv. 7
Numbers	1288	xvii. 5
Deuteronomy	955	xvii. 10
	5845	Levit. viii. 8
THE PROPHETS.		
Joshua	656	xiii. 26
Judges	618	x. 8
1 and 2 Samuel	1506	1 Sam. xxviii. 24
1 and 2 Kings	1534	1 Kings xxii. 6
Isaiah	1295	xxxiii. 21
Jeremiah	1365	xxviii. 2
Ezekiel	1273	xxvi. 1
Minor Prophets	1050	Micah iii. 12
	9297	

TABLE VI.—*continued.*

THE HAGIOGRAPHIA.

Psalms	2527	lxxviii. 36
Proverbs	915	xvi. 18
Job	1070	xxii. 16
Song of Songs	117	iv. 4
Ruth	85	ii. 21
Lamentations	154	iii. 34
Ecclesiastes	222	vi. 10
Esther	167	v. 7
Daniel	357	v. 30
Ezra. Nehemiah	688	Neh. iii. 32
1 and 2 Chronicles	1656	1 Chron. xxvii. 25
	<hr/> 7958	

$$5845 + 9297 + 7958 = 23,100.$$

NOTE.—The number of verses in each book of the Minor Prophets is as follows:—

Hosea - - - 197	Jonah - - - 48	Zephaniah - - 53	} Total, 1,050.
Joel - - - 73	Micah - - - 105	Haggai - - - 38	
Amos - - - 146	Nahum - - - 47	Zechariah - - 211	
Obadiah - - 21	Habakkuk - - 56	Malachi - - - 55	

But though the two Lists elaborated on different principles yield the same number of verses, yet the editions of Hebrew Scriptures have two verses more in the Pentateuch. Thus, Exodus and Deuteronomy have respectively 1,210 and 956 verses, and not 1,209 and 955, as given in the Massorah. The difference of the two verses arises from the versicular division of the Decalogue. Trite as this may seem, it was deemed of sufficient importance to agitate the different branches of Christendom throughout the world. The explanation of all this is to be found in Jewish tradition. According to the most ancient Palestinian authorities, the words, "I am Jehovah, thy God, who have brought thee out of the land of Egypt, out of the house of bondage, thou shalt have no other gods besides me," which constitute verses 2 and 3 in the Exodus Decalogue (cap. xx.), and verses 6 and 7 in the Deuteronomy Decalogue (cap. v.), were regarded from time immemorial as one and the first precept. Hence,

R. Ishmael, the representative and conservator of the ancient Palestinian *Halacha*, remarks the expression, "he had despised the word of the Lord" (Numb. xv. 31), denotes he has been guilty of idolatry, and thus despised *the first* precept which God communicated to Moses, viz., "I am Jehovah, thy God.....thou shalt have no other gods besides me."⁴⁸ Hence this view is not only followed by Philo and Josephus,⁴⁹ but is expressed in the accentuation of the Massoretic text, where עבדים, *bondage*, which in the editions terminates verse 2 in Exod. xx. and verse 7 in Deut. v., has simply *Athnach*, thus showing that it is intimately connected with the following verse, and that there should be no versicular division here. The later doctors, however, not only divided this single precept into two commandments,—or rather, separated the verse into two verses, and made the second verse thus obtained a part of the second precept,—but actually tried to obliterate the vestiges of the ancient practice.⁵⁰ It is therefore the present versicular division of the Decalogue, both in Exodus and Deuteronomy, according to the later Rabbins, which yields the two verses more than the Massoretic numbering.

Far more formidable is the difficulty arising from the discrepancy between the Talmud, the Midrashim, and the Massorah, with regard to the number of verses in several books of the Hebrew Scriptures. There are two instances in the Talmudic literature in which the verses are mentioned apart from the Massorah, and these two statements not only disagree with the Massoretic numbers, but are at variance with each other. For

⁴⁸ רבי ישמעאל אומר בע"ז הכתוב מדבר שנאמר כי את דבר ה' בזה שבינה על דבור הראשון שנאמר למשה כפי הגבורה אנכי ה' אלהיך וגו' לא יהיה לך אלהים Comp. *Siphra* sec. cxii., fol. 33 a, ed. Tiedmann, Vienna, 1864.

⁴⁹ Comp. Philo, *Quis rerum. divin. haer.*, section xxxv., Opp. i. 496; *De Decal.*, section xii., Opp. ii. 188; Josephus, *Antiq.*, III. v. 5.

⁵⁰ Comp. Geiger, *Jüdische Zeitschrift*, vol. iv. p. 113, etc. For the controversy on the division of the Decalogue, we must refer to Herzog, *Real-Encyclopädie für Protestantische Theologie und Kirche*, s. v. DEKALOG; Kitto, *Cyclopædia of Biblical Literature*, s. v. DEKALOGUE.

the better understanding of their critical value, we shall give them *in extenso*. The first passage occurs in the Talmud (*Kiddushin* 30 a), and is as follows:⁵¹ “The ancients were called Sopherim (*i. e.*, *counters*), because they counted all the letters [words, and verses] in the Scriptures, for they say that the *Vav* in *בֶּחַן*, *belly* (Levit. xi. 42), is the middle letter in the Pentateuch, *דָּרַשׁ דָּרַשׁ*, *seeking he sought* (Levit. x. 16), are the middle words, and *וְהִתְנַלַּח*, *and he shall be shaven* (Levit. xiii. 33), is the middle verse; that the *Ayin* in *מִיַּעַר*, *out of the wood* (Ps. lxxx. 14), is the middle letter in the Psalter, and that ‘but he, being full of compassion, forgave their iniquity’ (Ps. lxxviii. 38) is the middle verse. Whereupon R. Joseph asked, ‘Does the *Vav* in *בֶּחַן*, *belly*, belong to the first or second half of the Pentateuch?’ He [*i. e.*, R. Saphra] was answered, ‘Let us fetch a Pentateuch and count it;’ and Rabba bar bar Chana says, ‘They did not leave the place until a Pentateuch was fetched, and they accomplished the counting. He then said to him, they (*i. e.*, the Sopherim) were conversant with the *plenes* and *defectives*, but we are not conversant. [Hence we cannot find it out.]’ R. Joseph asked again, ‘Does the word *וְהִתְנַלַּח*, *and he shall be shaven*, belong to the first or second half [of the Pentateuch]?’ Abaja answered, ‘Our counting the verses is of no use, as we are not conversant with the versicular divisions,’ for when R. Acha bar Ada came [to Babylonia] he said, ‘The Westerns divide Exod. xix. 19 into three verses. The Rabbins submit the Pentateuch has

⁵¹ לפיכך נקראו ראשונים סופרים שהיוסופרים כל אותיות (והיבות וספוקים) שבתורה שהיו אומרים וא"ו רנחון חציון של איתיות של ספר תורה. דרש דרש חציון של חיבות. והתנלח של פסוקים. יכרסמנה חזיר מיצר. ע"ן דיער חציון של תהלים. והוא רחום יכפר עון. חציון דספוקים: בעי רב יוסף וא"ו רנחון מיהא גסא או מיהא גסא אמר ליה ניתי ספר תורה ואמננהו מי לא אמר רבא בר בר חנה לא חזו משם עד שהביאו ספר תורה ומנאו: אמר ליה אנהון בקיאי בחסרות ויתרות אנן לא בקיאינן. בעי רב יוסף והתנלח מיהא גסא או מיהא גסא אמר ליה אביי פסוקי מיהא ליתו לימניה בפסוקי נמי לא בקיאינן. דבי אחא רב אחא בר אדא אמר במערבא פסקי ליה להאי קרא לתלתא פסוקי ויאמר יהוה אל משה הנה אנכי בא אליך בעב הענן: תנו רבנן חמשה אלפים ושמונה מאות

5,888 verses, the Psalter has eight verses more (*i. e.*, 5,896), and Chronicles eight verses less (*i. e.*, 5,880)." The second account is in the *Midrash Jalkut*, where we are told that "the number of verses in the Pentateuch is 15,842, the number in the Prophets is 9,297, and the number in the Hagiographa is 5,063, making in all 23,199, exclusive of those verses divided into two."⁵²

In attempting to reconcile these conflicting statements, two questions suggest themselves. First, Does the word פסוק, *Pasuk*, which in the Massorah is the technical expression for *verse*, as we now have it in the Bible, denote the same thing in the Talmud, or was there another versicular division? And second, Are the numbers in these two records immaculate? As פסקים (from פסק, *secare*, *abscindere*, κόπτειν) exactly corresponds in etymology to the Greek κόμματα, and the Latin *cæsa*, that is, half verses, or members of verses, some have thought that, in the excessive statements in the Talmud and Midrash, this term is used to denote στίχοι, *verses*, especially when speaking of the poetical books.

The passages, however, quoted in the Mishna and Talmud show beyond doubt that the Talmudic versicular division corresponded to that of the Massorah, and that, with the exception of isolated passages, the verses were then already orally and traditionally fixed. Thus, the injunction in the Mishna, about the public reading of the Law, distinctly speaks of verses. "He who reads in the Law," we are told, "must not read less than three verses. Nor must he read to the interpreter more than one verse at a time, but from the Prophets he may read three verses at a time. If the three verses hap-

ושמונים ושמונה פסוקים הוא פסוקי ספר תורה יתר עליו תלים שמונה חסר ממנו דברי הימים שמונה

⁵² וחשבון פסוקים של חומש מ"ו אלפים ותרמ"ב. ופסוקים של נביאים ט' אלפים ורצ"ד
פסוקים של כתובים ה' אלפים וס"ג. כך הכל כ"ג אלף קצ"ט. לבר מספר
Comp. *Jalkut* Pericope *Ekeb* (עקב) section 855. Fürst has rightly pointed out that החיצונים
in the editions of the *Jalkut* is a corruption of החצאים, and that מִסְפָּר is to be read
instead of מִסְפָּר. Comp. *Der Kanon des Alten Testamentes*, p. 123.

pen to be three sections, he must read each one separately" (*Megilla* iv. 4). Here we have not only verses most emphatically spoken of, but the versicular division of the Masorah, since it is evident that the three verses forming three different sections, here alluded to, are Isa. lii. 3-5. This is placed beyond the shadow of a doubt by *Sopherim* (xi. 1), where Isa. lii. 3-5 is quoted in illustration of the meaning of this Mishna. Again, Deut. xxxiv. 5-12 is quoted in the Talmud as the last eight verses of the Pentateuch" (*Baba Bathra* 14 b, *Mennachoth* 30 a). In the passage from *Kiddushin* 30 a, quoted above, R. Acha b. Ada tells us that the Palestinians divided Exod. xix. 9 into three verses. As all these verses exactly correspond to the Masoretic versicular division, there can be no doubt that the Talmudic פסוק, *Pasuk*, denotes a verse in the present technical sense of the word, as applied to the Scriptures. These verses the Talmud declares were indicated in the text by disjunctive accents (פסוק טעמים, *Nedarim* 37 a), and in accordance with the practice of tracing every venerable usage to the Great Lawgiver, it ascribes the division to Moses himself, and lays down the rule that "a verse which Moses has not divided we too must not divide" (*Megilla* 22 a).⁵³

But these passages also show that there was a subdivision of verses for liturgical purposes. We have seen that of the seven persons called to the lectern, each one had to read three verses, thus requiring twenty-one verses for each hebdomadal lesson. Now, in looking at the Triennial List, it will be observed that many of the Pericopes have not the requisite number of verses. Thus, in Genesis, Nos. 8, 12, 16, and 21; in Leviticus, No. 13; in Numbers, Nos. 10, 21, 26; and in Deut., No. 25, are deficient. The verses in these Pericopes

⁵³ Comp. כל פסוקא דלא מסקיד כשהא אמן לא מסקין. *Megilla* 22 a.

were subdivided into two verses, and, in some cases, into three, as in Genesis, No. 8, which has only eight verses, in order to obtain the legal number (*Taanith* 27 b). Hence obtained a number of small verses in Palestine, side by side with the ordinary verses, the traces of which are to be found in the “*hiatus in the middle of a verse*” (פסקא באמצע פסוק), or the subdivision of a verse (*Vide supra*, p. 346).

Apart, however, from the subdivisions which were called forth by the nature of the Pericopes, some verses were divided differently in Palestine to those in Babylon. Thus, for instance, the quotation from the Talmud (*Kiddushin* 30 a, *vide supra*, p. 357), states that Exodus xix. 9, was divided into three verses. As the Palestinian Pericope in which this verse occurs (Exodus, No. 15) has more than the legal number of twenty-one verses, it is evident that this division represents a variation between the Easterns and Westerns, and that there must have been some more of these variations, which, like many other Palestinian usages, have disappeared through the powerful influence of the later Babylonian practices. Indeed, we are distinctly told, in the Jerusalem Talmud, that in some Synagogues the prælectors subdivided the verses, to facilitate the understanding of their import for the children who were present (*Jerusalem Megilla* v. 5). These considerations sufficiently account for the difference of forty-three verses between the Talmudic and the Massoretic numbers in the Pentateuch.

As for the discrepancy between the Talmud and the Masorah respecting the number of verses in the Psalms and Chronicles, we submit that the Talmudic statement must be rejected as untrustworthy, because the text of it is manifestly corrupted, and, even if true, because those who made it claim no authority for it. That the text is defective is self-evident. It states that “the ancients were called Sopherim, because they counted all the letters in the Law.” To prove this fact,

the middle letters, the middle words, and the middle verses of the Pentateuch and of the Psalms are adduced. Now, this proof shows beyond doubt that the original statement must have been, "they counted the letters, *words and verses* in the Law, *Prophets and Hagiographa*, and that the words in italics have dropped out of the text, otherwise the reference to one book of the Hagiographa, and the citation of the words and verses have no meaning whatever. If, then, entire words could fall out of this passage, surely we cannot be called upon to accept it as immaculate, in the simple letters which express the numerals, and which, as is well known to paleographers, are most easily mutilated.

Moreover, the Talmudic statement distinctly declares that this department of textual work belonged to a special guild; that even so great an authority as R. Joseph b. Chija, who lived 300 A. D., and who is the reputed translator of the Hagiographa into Chaldee,⁵⁴ did not know whether the *Vav* in *בֶּחַיִן*, belly (Levit. xi. 42), and the verse commencing with *וְהִתְנַלֵּחַ*, and he shall be shaven (Ibid. xiii. 33), belonged to the first or second half of the Pentateuch,⁵⁵ and that the doctors gave up all hope of ascertaining it, even after they counted all the letters of the Law, because they were not conversant with the *plenes* and *defectives*, which they declared was knowledge peculiar to the Sopherim. As the Massorites were the successors of the Sopherim, whose labours they collected and embodied in the Massorah, it is only reasonable that we should accept the numbers which they give as authoritative, and reject those of the Talmud, both as corrupt, and as claiming no authority in these

⁵⁴ For account of R. Joseph b. Chija, also called *Joseph Cæcus* = סני נהור, see Kitto, *Cyclopædia of Biblical Literature*, s. v.

⁵⁵ The remark, that *וְהִתְנַלֵּחַ* (Levit. xiii. 33) is the middle verse, must be wrong, for not only does the Massoretic statement, that *יִשָּׁם* (Levit. viii. 8) is the middle verse, exactly coincide with the versicular division, but the difference between Levit. viii. 8 and xiii. 33 is 160 verses, which is far too much, seeing that the variation between the Talmud and the Massorah amounts only to 40 verses altogether.

matters. Moreover, the system of accentuation which obtained about 600 A. D., and which is admitted on all hands to be, with few exceptions, a correct representation of the ancient and oral versicular division, exactly corresponds to the Masoretic numbers.

The second statement, contained in the *Midrash Jalkut*, so manifestly bears on its very face the stamp of corruption, that it hardly occasions us any difficulty. Though the sum total of the verses in it almost equals that of the Massorah, the difference amounting only to 99 verses, yet the distribution of the verses over the Law, Prophets, and Hagiographa is so preposterously disproportionate, as to convince the most casual observer that the letter or word representing a *thousand* has been transferred from the third division, *i. e.*, the Hagiographa, into the first division, *i. e.*, the Pentateuch.

It only remains to be remarked that the versicular division is indicated in the MSS., and the early editions of the Hebrew Scriptures, by the accent called *Soph Pasuk* (סוף פסוק), followed by (:), which we call a colon, or (;) a semi-colon. The first attempt to indicate the number of verses in each chapter is made in Bomberg's third Rabbinical Bible (1546-48), where a numeral expressed by a Hebrew letter is placed in the margin at every fifth verse. In 1557, the Pentateuch, which was issued from the press at Sabionetta, had the verses marked with numerals; and in 1569-72, the entire text of the Old Testament appeared in the Antwerp Polyglott with an Arabic numeral against the margin of every verse; and in 1661, the Hebrew text by itself was published by Athias (Amsterdam), with an Arabic numeral to each verse. The versicular division was first introduced into the English Bible in the Genevan Version (1560), thence it was adopted in the Bishops' Bible (1568), and afterwards into the Authorised Version, 1611.

As the Authorised Version, although it generally follows the

Massoretic divisions, departs in some cases from the original, we subjoin a list of variations, which is necessitated by the fact that our references in this Essay are to the Hebrew. It is therefore hoped that the subjoined list will explain the apparent difficulties which may arise from the differences in the citations.

TABLE VII.

VARIATIONS IN CHAPTERS AND VERSES BETWEEN THE HEBREW AND THE AUTHORIZED VERSION.

Hebrew.	Auth. Version.	Hebrew.	Auth. Version.	Hebrew.	Auth. Version.
GENESIS.		DEUTERONOMY.		1 KINGS.	
xxxii. 1	xxxi. 55	xxiii. 1	xxii. 80	xx. 2-3a	xx. 2
" 2	xxxii. 1	" 2	xxiii. 1	" 3b	" 3
" 3-38	" 2-32	" 3-26	" 2-25	xxii. 21b-22	xxii. 22
EXODUS.		xxviii. 69	xxix. 1	" 43-44	" 43
vii. 26	viii. 1	xxix. 1	" 2	" 45	" 44
" 27-29	" 2-4	" 2-28	" 3-29	" 46-54	" 45-53
viii. 1	" 5	JOSHUA.		2 KINGS.	
" 2-28	6-32	Not in the Massoretic Text.	xxi. 36-37	xii. 1	xi. 21
xxi. 37	xxii. 1		" 38	" 2	xii. 1
xxii. 1	" 2	xxi. 36	" 38	" 3-22	" 2-21
" 2-30	" 3-31	" 37-43	" 39-45	ISAIAH.	
LEVITICUS.		1 SAMUEL.		viii. 23	ix. 1
v. 20	vi. 1	xix. 1a	xix. 1	ix. 1	" 2
" 21-26	" 2-7	" 1b-2	" 2	" 2-20	" 3-21
vi. 1	" 8	xxi. 1	xx. 42	lxiii. 19b	lxiv. 1
" 2-23	" 9-30	" 2	xxi. 1	lxiv. 1	" 2
NUMBERS.		" 3-16	" 2-15	" 2-11	" 3-12
xvii. 1	xvi. 86	xxiv. 1	xxiii. 29	JEREMIAH.	
" 2-15	" 37-50	" 2	xxiv. 1	viii. 23	ix. 1
" 16	xvii. 1	" 3-23	" 2-22	ix. 1	" 2
" 17-28	" 2-13	2 SAMUEL.		" 2-25	" 3-26
" 19a	xxvi. 1	xix. 1	xviii. 83	EZEKIEL.	
xxx. 1	xxix. 40	" 2	xix. 1	xxi. 1	xx. 45
" 3	xxx. 1	" 3-44	" 2-43	" 2-5	" 46-49
" 3-17	" 2-16	1 KINGS.		" 6	xxi. 1
DEUTERONOMY.		v. 1	iv. 21	" 7-37	" 3-32
v. 17	v. 18-20	" 2-14	" 22-34	HOSEA.	
" 18	" 21	" 15	v. 1	ii. 1	i. 10
" 19-30	" 22-33	" 16-32	" 2-18	" 2	" 11
xlii. 1	xlii. 32	xviii. 33-34a	xviii. 83	" 3	ii. 1
" 2	xlii. 1	" 34b	" 84	" 4-25	" 3-23
" 3-19	" 2-18				

TABLE VII.—*continued.*

Hebrew.	Auth. Version.		Hebrew.	Auth. Version.		Hebrew.	Auth. Version.	
HOSEA.			PSALMS.			PSALMS.		
xii.	1 xi.	12	vii.	1 vii.	<i>title</i>	xxxi.	1 xxxi.	<i>title</i>
"	2 xii.	1	"	2 "	1	"	2 "	1
"	3-15 "	2-14	"	3-18 "	2-17	"	3-25 "	2-24
xiv.	1 xiii.	16	viii.	1 viii.	<i>title</i>	xxxii.	1a xxxii.	<i>title</i>
"	2 xiv.	1	"	2 "	1	"	1b "	1
"	3-10 "	2-9	"	3-10 "	2-9	xxxiv.	1 xxxiv.	<i>title</i>
JOEL.			ix.	1 ix.	<i>title</i>	"	2 "	1
iii.	1 ii.	28	"	2 "	1	"	3-23 "	2-22
"	2-5 "	29-32	"	3-21 "	2-20	xxxvi.	1 xxxvi.	<i>title</i>
iv.	1 iii.	1	xi.	1a xi.	<i>title</i>	"	2 "	1
"	2-21 A	2-21	"	1b "	1	"	3-13 "	2-12
JONAH.			xii.	1 xii.	<i>title</i>	xxxviii.	1 xxxviii.	<i>title</i>
ii.	1 i.	17	"	2 "	1	"	2 "	1
"	2 ii.	1	"	3-9 "	2-8	"	3-23 "	2-22
"	3-11 "	2-10	xiii.	1 xiii.	<i>title</i>	xxxix.	1 xxxix.	<i>title</i>
MICAH.			"	2 "	1	"	2 "	1
iv.	14 v.	1	"	3-5 "	2-4	"	3-14 "	2-13
v.	1 "	2	"	6a "	5	xl.	1 xl.	<i>title</i>
"	2-14 s	3-15	"	6b "	6	"	2 "	1
NAHUM.			xiv.	1a xiv.	<i>title</i>	"	3-18 "	2-17
ii.	1 i.	15	"	1b "	1	xli.	1 xli.	<i>title</i>
"	2 ii.	1	xv.	1a xv.	<i>title</i>	"	2 "	1
"	3-14 "	2-13	"	1b "	1	"	3-14 "	2-13
ZECHARIAH.			xvi.	1a xvi.	<i>title</i>	xlii.	1 xlii.	<i>title</i>
ii.	1 i.	18	"	1b "	1	"	2 "	1
"	2-4 "	19-21	"	3-51 "	2-50	"	3-12 "	2-11
"	5 ii.	1	xix.	1 xix.	<i>title</i>	xliv.	1 xliv.	<i>title</i>
"	6-17 "	2-13	"	2 "	1	"	2 "	1
MALACHI.			"	3-15 "	2-14	"	3-27 "	2-26
iii.	19 iv.	1	xx.	1 xx.	<i>title</i>	xlvi.	1 xlvi.	<i>title</i>
"	20-24 "	2-6	"	2 "	1	"	2 "	1
PSALMS.			"	3-10 "	2-9	"	3-18 "	2-17
iii.	1 iii.	<i>title</i>	xxi.	1 xxi.	<i>title</i>	xlvi.	1 xlvi.	<i>title</i>
"	2 "	1	"	2 "	1	"	2 "	1
"	3-9 "	2-8	"	3-14 "	2-13	"	3-12 "	2-11
iv.	1 iv.	<i>title</i>	xxii.	1 xxii.	<i>title</i>	xlvi.	1 xlvi.	<i>title</i>
"	2 "	1	"	2 "	1	"	2 "	1
"	3-9 "	2-8	"	3-32 "	2-31	"	3-18 "	2-17
v.	1 v.	<i>title</i>	xxiii.	1a xxiii.	<i>title</i>	xlvi.	1 xlvi.	<i>title</i>
"	2 "	1	"	1b "	1	"	2 "	1
"	3-18 "	2-12	xxiv.	1a xxiv.	<i>title</i>	"	3-12 "	2-11
vi.	1 vi.	<i>title</i>	"	1b "	1	xlvi.	1 xlvi.	<i>title</i>
"	2 "	1	xxix.	1a xxix.	<i>title</i>	"	2 "	1
"	3-11 "	2-10	"	1b "	1	"	3-12 "	2-11
			xxx.	1 xxx.	<i>title</i>	"	3-10 "	2-9
			"	2 "	1	xlvi.	1 xlvi.	<i>title</i>
			"	3-13 "	2-12	"	2 "	1
			"	3-13 "	2-12	"	3-10 "	2-9

TABLE VII.—*continued.*

Hebrew.	Auth. Version.		Hebrew.	Auth. Version.		Hebrew.	Auth. Version.				
PSALMS.			PSALMS.			PSALMS.					
lii.	4-11	"	2-9	lxx.	1	lxx.	title	xcii.	8-16	"	2-15
liii.	1	liii.	title	"	2	"	1	xcviii.	1a	xcviii.	title
"	2	"	1	"	3-6	"	2-7	"	1b	"	1
"	3-7	"	2-9	lxxiii.	1a	lxxiii.	title	c.	1a	c.	title
liv.	1-2	liv.	title	"	1b	"	1	"	1b	"	1
"	3	"	1	lxxiv.	1a	lxxiv.	title	ci.	1a	ci.	title
"	4-9	"	2-7	"	1b	"	1	"	1b	"	1
lv.	1	lv.	title	lxxv.	1	lxxv.	title	cii.	1	cii.	title
"	2	"	1	"	2	"	1	"	2	"	1
"	2-34	"	2-23	"	3-11	"	2-10	"	3-29	"	2-28
lvi.	1	lvi.	title	lxxvi.	1	lxxvi.	title	cviii.	1	cviii.	title
"	2	"	1	"	2	"	1	"	2	"	1
"	3-14	"	2-13	"	3-13	"	2-12	"	3-14	"	2-13
lvii.	1	lvii.	title	lxxvii.	1	lxxvii.	title	cix.	1a	cix.	title
"	2	"	1	"	2	"	1	"	1b	"	1
"	3-12	"	2-11	"	3-21	"	2-20	cx.	1a	cx.	title
lviii.	1	lviii.	title	lxxviii.	1a	lxxviii.	title	"	1b	"	1
"	2	"	1	"	1b	"	1	cxx.	1a	cxx.	title
"	3-12	"	2-11	lxxix.	1a	lxxix.	title	"	1b	"	1
lix.	1	lix.	title	"	1b	"	1	cxxi.	1a	cxxi.	title
"	2	"	1	lxxx.	1	lxxx.	title	"	1b	"	1
"	3-18	"	2-17	"	2	"	1	cxixii.	1a	cxixii.	title
lx.	1-2	lx.	title	"	3-20	"	2-19	"	1b	"	1
"	3	"	1	lxxxi.	1	lxxxi.	title	cxixiii.	1a	cxixiii.	title
"	4-14	"	2-12	"	2	"	1	"	1b	"	1
lxi.	1	lxi.	title	"	3-17	"	2-16	cxixiv.	1a	cxixiv.	title
"	2	"	1	lxxxii.	1a	lxxxii.	title	"	1b	"	1
"	3-9	"	2-8	"	1b	"	1	cxixv.	1a	cxixv.	title
lxii.	1	lxii.	title	lxxxiii.	1	lxxxiii.	title	"	1b	"	1
"	2	"	1	"	2	"	1	cxixvi.	1a	cxixvi.	title
"	3-12	"	2-12	"	3-19	"	2-18	"	1b	"	1
lxiii.	1	lxiii.	title	lxxxiv.	1	lxxxiv.	title	cxixvii.	1a	cxixvii.	title
"	2	"	1	"	2	"	1	"	1b	"	1
"	3-12	"	2-11	"	3-13	"	2-12	cxixviii.	1a	cxixviii.	title
lxiv.	1	lxiv.	title	lxxxv.	1	lxxxv.	title	"	1b	"	1
"	2	"	1	"	2	"	1	cxixix.	1a	cxixix.	title
"	3-11	"	2-10	"	3-14	"	2-13	"	1b	"	1
lxv.	1	lxv.	title	lxxxvi.	1a	lxxxvi.	title	cxixx.	1a	cxixx.	title
"	2	"	1	"	1b	"	1	"	1b	"	1
"	3-14	"	2-13	lxxxvii.	1a	lxxxvii.	title	cxixxi.	1a	cxixxi.	title
lxvi.	1a	lxvi.	title	"	1b	"	1	"	1b	"	1
"	1b	"	1	lxxxviii.	1	lxxxviii.	title	cxixxii.	1a	cxixxii.	title
lxvii.	1	lxvii.	title	"	2	"	1	"	1b	"	1
"	2	"	1	"	3-9	"	2-18	cxixxiii.	1a	cxixxiii.	title
"	3-8	"	2-7	lxxxix.	1	lxxxix.	title	"	1b	"	1
lxviii.	1	lxviii.	title	"	2	"	1	cxixxiv.	1a	cxixxiv.	title
"	2	"	1	"	3-23	"	2-23	"	1b	"	1
"	3-26	"	2-25	xc.	1a	xc.	title	cxixxix.	1a	cxixxix.	title
lxix.	1	lxix.	title	"	1b	"	1	"	1b	"	1
"	2	"	1	xcii.	1	xcii.	title	cxl.	1	cxl.	title
"	3-27	"	2-26	"	2	"	1	"	2	"	1

TABLE VII.—*continued.*

Hebrew.	Auth. Version.		Hebrew.	Auth. Version.		Hebrew.	Auth. Version.				
PSALMS.			SONG OF SONGS.			NEHEMIAH.					
cxl.	8-14	"	2-18	vii.	31-4	"	2-18	iv.	1	"	7
cxli.	1a	cxli.	title					"	2-17	"	8-23
"	1b	"	1	ECCLESIASTES.			x.	1	ix.		38
cxlii.	1	cxlii.	title	iv.	17	v.	1	"	2	x.	1
"	2	"	1	v.	1	"	2	"	3-40	"	2-89
"	3-8	"	2-7	"	2-19	"	3-20				
cxliii.	1a	cxliii.	title				1 CHRONICLES.				
"	1b	"	1	DANIEL.			v.	27	vi.		1
cxlv.	1a	cxlv.	title	iii.	31	iv.	1	"	28-41	"	2-15
"	1b	"	1	"	32-33	"	2-3	vi.	1	"	16
JOB.			iv.	1	"	4	"	2-86	"	17-81	
xl	25	xli.	1	"	2-34	"	5-37	2 CHRONICLES.			
"	26-32	"	2-8	vi.	1	v.	31	i.	18	ii.	1
xli.	1	"	9	"	2	vi.	1	ii.	1	"	2
"	2-26	"	10-34	"	3-29	"	2-28	"	2-17	"	3-18
SONG OF SONGS.			NEHEMIAH.								
vii.	1	vi.	13	iii.	33	iv.	1	xiii.	23	xiv.	1
"	2	vii.	1	"	34-33	"	2-3	xiv.	1	"	2
				"				"	2-14	"	3-15

It will be seen, from the above list, that the greater majority of these variations arises from the fact, that in the Hebrew the titles of the Psalms form a part of the versicular division, and hence are numbered like all the other verses, whilst in the Authorised Version they are not reckoned as verses, but simply as superscriptions.

In many of the other differences the English version chiefly follows the Vulgate and the Genevan translations. Hence, some of the altered chaptral divisions are better than in the Hebrew, and are exempt from the strictures made above (p. 351), whilst others are decidedly worse. Thus Gen. xxxii., which in the authorised version commences in accordance with the Vulgate and the Geneva Bible, is worse than the Hebrew, though the latter is bad enough; and Leviticus vi., which is likewise in accordance with the Vulgate and Genevan, is simply arbitrary; whilst caps. viii. and xxii. in Exodus, cap. xxx. in Numbers, and cap. xiii. in Deuteronomy are decidedly an improvement upon the chaptral division.

In the versicular division, the English version only very rarely deviates from the Hebrew, even when the latter manifestly breaks in upon the sense. The few instances, however, in which the Authorised Version departs from the original are unquestionably no improvement. Thus the division of 1 Samuel xix. into two verses is not only against the Hebrew, but against the Vulgate and the Genevan version, and answers no purpose. The division of 1 Kings xviii. 34 into two, and the taking over of the first half to verse 33, are not only contrary to the Hebrew, but against the versicular divisions of the Vulgate and the Genevan Bibles, which the Authorised Version generally follows. The same is the case with the alteration in 1 Kings xx. 2, 3. Where, however, a re-division would have been an improvement, the original verses are left. Thus, for instance, Genesis xxiii. 17, 18, should have been joined together; so also 1 Chronicles xxi. 11, 12; 2 Chronicles xxx. 18, 19; Isaiah lxv. 6, 7; Psalms xcvi. 12, 13; xcviii. 8, 9.⁵⁶ As for the two verses, *i. e.*, xxi. 36, 37, which are to be found in Joshua, they are not owing to a variation in the versicular division of the English version, but to the fact that they are entirely wanting in the Massoretic text. The discussion about their genuineness must be deferred to another place.

The extraordinary influence which the Massoretic labours have exercised upon Biblical scholars are by no means confined to the phenomena exhibited in the Hebrew text. Christian scholars have endeavoured to imitate this department of wearisome toil, for the protection of our English Version. One gentleman spent three years in trying to effect that for our translation, which the ancient Sopherim did for the Old Testament; and the results of his researches are embodied in a treatise entitled, *The Old and New Testa-*

⁵⁶ Comp. *An Exercitation concerning the original of the Chapters and Verses in the Bible*, by Sam. Clark, M. A., page 20, London, 1698.

ment Dissected. They are summarised in the following Table :—

TABLE VIII.

NUMBER OF BOOKS, CHAPTERS, VERSES, WORDS, LETTERS, ETC., IN THE
ENGLISH BIBLE.

OLD TESTAMENT.			NEW TESTAMENT.			
No. of	Middle.		No. of	Middle.		Total.
Books .	39	Proverbs	Books .	27	2 Thessalonians	66
Chapters	929	Job xxix.	Chapters	260	Romans xiii. xiv.	1,189
Verses .	28,214	2 Chr. xx. 17, 18	Verses .	7,959	Acts xvii. 17	81,178
Words .	592,489		Words .	181,253		773,692
Letters .	2,728,100		Letters .	838,380		8,566,480
The word <i>and</i> 35,548 times			The word <i>and</i> 6,855 times			42,398
" <i>Jehovah</i> 6,855 "						
Least verse, 1 Chron. i. 1.			Least verse, John xi. 35.			
Ezra vii. 21 contains all the letters of the alphabet, except <i>j</i> .						
2 Kings xix. and Isaiah xxxvii. are alike.						

APOCRYPHA.

Chapters	183
Verses	6,081
Words	252,185

The above figures, which we have tabulated, are given in a foot note to the Prolegomena to Walton's Polyglott. Archdeacon Wrangham, the editor of these learned dissertations (Cambridge, 1828), who added this note to Walton's account of the Massoretic numbers, remarks, "Eundem item calculum, quoad Versionem Biblicorum Anglicanum, sæculo proximè elapso Masoretha quidam Christianus, haud profectò benè acto triennio, confecit in opere cui titulus *The Old and New Testament Dissected.*"⁵⁷

⁵⁷ Comp. Briani Watoni in *Biblia Polyglotta Prolegomena*, tom. i., p. 433, etc., Cantabrigiæ, 1828.

PROCEEDINGS
 OF THE
 LITERARY AND PHILOSOPHICAL SOCIETY
 OF
 LIVERPOOL,
 DURING THE
 FIFTY-NINTH SESSION, 1869-70.
 No. XXIV.



LONDON:
 LONGMANS, GREEN, READER, & DYER.
 LIVERPOOL:
 DAVID MARPLES, LORD STREET
 1870.

This Volume has been edited by the Honorary Secretary.

The Authors have revised their Papers.

The Authors alone are responsible for facts and opinions.

The Society exchanges Proceedings with other publishing bodies through the Secretary, from whom back numbers may be obtained.

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ON THE SOCIETY'S ROLL AT THE CLOSE OF THE 59TH SESSION.

CORRECTED TO OCTOBER, 1870.

Life Members are marked with an Asterisk.

- Oct. 11, 1833 Aiken, James, 4, *Gambier-terrace*.
Nov. 4, 1867 Allen, John Fenwick, *Windleshaw, St. Helens*.
March 7, 1864 Archer, F., jun., B.A. Trin. Coll., Cantab., 3,
Brunswick Street.
*Nov. 28, 1853 Archer, T. C., F.R.S.E., F.R.S.S.A., Director of
the Industrial Museum, *Edinburgh*.
Dec. 14, 1863 Ashe, Theop. Fielding, *Atherton-street*, and *Moss*
Bank, Lodge-lane.
Feb. 22, 1855 Avison, Thomas, F.S.A., 18, *Cook-street*, and
Fulwood Park, Aigburth.
Jan. 11, 1864 Bagshaw, John, 87, *Church-street*, and *Canning-*
terrace, 201, *Upper Parliament-street*.
May 1, 1854 Bahr, G. W., *Old Castle Buildings, South Castle-*
street, and 2, *South-hill Grove, Aigburth*.
May 4, 1863 Bailey, Fras. J. M.R.C.S., 51, *Grove-street*.
Oct. 29, 1860 Banister, Rev. W., B.A., *St. James's Mount*.
Jan. 13, 1862 Baruchson, Arnold, *Batavia Buildings, Hackins*
Hey, and *Blundell-sands Great Crosby*.
Nov. 15, 1869 Beer, Joseph B. de (A. Baruchson & Co.), *Bata-*
via Buildings, Hackins Hey.
March 9, 1857 Bell, Christopher, *Redcross-street*, and 55, *Hamil-*
ton-square, Birkenhead.
Dec. 10, 1866 Benas, Baron Louis, 5, *South Castle-street*.
Nov. 14, 1864 Bennett, J. M. *St. George's-place, Lime-street*,
and 109, *Shaw-street*

- Feb. 6, 1854 Bennett, William, *St. George's-place, Lime-street, and Heysham Tower, near Lancaster.*
- Nov. 27, 1865 Biggs, Arthur Worthington, 15, *Tithebarn-street, and 62, Falkner-street.*
- Nov. 18, 1867 Biggs, Russell H. W., 40, *Castle-street.*
- Oct. 31, 1859 Birch, Jas., 12, *The Temple, Dale-street.*
- Jan. 25, 1864 Birchall, James, Governor of the Liverpool Industrial Schools, *Kirkdale, HON. SECRETARY.*
- April 15, 1861 Blake, James, 63, *Kitchen-street, and 45, Canning-street.*
- March 9, 1866 Blood, William, *Chamber of Commerce.*
- Nov. 26, 1866 Boulton, Joseph, 15 D, *Exchange Buildings, West.*
- *Mar. 6, 1835 Boulton, Swinton, 1, *Dale-street, and 71, Bedford-street, South.*
- Oct. 19, 1868 Bower, Anthony, *Vauxhall Foundry, and Bowersdale, Seaforth.*
- Nov. 4, 1867 Bramwell, Ed., *Cowley Hill, St. Helens.*
- March 7, 1870 Brandon, Thomas, *Parkfield, Aigburth-road.*
- *Jan. 8, 1855 Brockholes, James Fitzherbert, *Puddington Old Hall, near Neston.*
- Oct. 31, 1864 Bromham, William, 4, *India Buildings, and 8, Montpellier-terrace, Upper Parliament-street.*
- Nov. 12, 1866 Brown, Edgar A., 86, *Bedford-street, South.*
- Oct. 18, 1869 Brown, J. Campbell, D. Sc., F.C.S., 152, *Falkner-street.*
- Feb. 4, 1867 Burden, Edward, 123, *Upper Parliament-street.*
- April 18, 1864 Burne, Joseph, *Royal Insurance Office, 1, North John-street, and Higher Tranmere.*
- Nov. 12, 1866 Butler, Rev. George, M.A. Oxon, *The College, Liverpool.*
- *May 1, 1848 Byerley, Isaac, F.L.S., F.R.C.S., *Victoria-road, Seacombe.*
- Feb. 23, 1863 Callon, W. J., M.D., 125, *Islington.*
- Nov. 3, 1862 Cameron, John, M.D., M.R.C.P., Physician to the Southern Hospital, and Lecturer on Medicine at the Royal Infirmary Sch. of Med., 17, *Rodney-street.*
- Jan. 25, 1869 Cape, John, (Norfolk, Cape & Co.,) 22, *North John-street.*

- Jan. 9, 1865 Cariss, Astrup, 40, *Castle-street*.
- Dec. 2, 1861 Chadburn, William, 71, *Lord-street*.
- Dec. 1, 1851 Clare, John Leigh, H, *Exchange Buildings North, and Hoylake*.
- Oct. 31, 1859 Clark, Charles H., 17, *North John-street, and Linden House, Rock Ferry*.
- Dec. 10, 1866 Clay, Rev. Walter Lowe, *Parsonage, Rainhill*.
- Jan. 26, 1863 Commins, Andrew, LL.D. Dub., *Eldon-chambers, 20, South John-street*.
- Nov. 1, 1869 Cook, C. H. (Lamport & Holt,) *Drury Buildings, 21, Water-street, and Blundell Sands*.
- Oct. 18, 1869 Cook, Henry Jas., *Byrom-street, and Burbo House, Blundell Sands*.
- Oct. 6, 1868 Crosfield, Wm., jun., 28, *Temple-court, and Alexandra-drive, Ullett Road*.
- Nov. 26, 1866 Curtis, Rev. F. H., M.A. Oxon, *The College, Shaw-street*.
- Feb. 8, 1864 Culbert, J. R., 40, *Chapel-street, and White House Out-lane, Woolton*.
- Dec. 14, 1868 Daley, Dennis, 28, *Brunswick-street*.
- Jan. 24, 1870 Dallinger, Rev. W. H., *Greenfield Road, Old Swan*.
- Nov. 12, 1866 Davies, E., F.C.S., *The Laboratory, Royal Institution, Colquitt-street*.
- Nov. 2, 1868 Dawbarn, William, *The Temple, Dale Street, and Mosley-hill*.
- Oct. 1, 1866 Dawson, Thomas, 26, *Rodney-street*.
- March 9, 1868, Dixon, W., *Seacombe*.
- Nov. 27, 1868 Dove, Jno. M., *Royal Insurance Office, and Claughton*.
- Jan. 23, 1848 Drysdale, John James, M.D. Edin., M.R.C.S. Edin., 36, *Rodney-street*.
- Oct. 5, 1863 Drysdale, W. G., 3, *Church-street, Egremont, and Regent-road*.
- Feb. 4, 1856 Duckworth, Henry, F.L.S., F.R.G.S., F.G.S., 5, *Cook-street, and 2, Gambier-terrace, VICE-PRESIDENT*.
- *Nov. 27, 1848 Edwards, John Baker, Ph.D. Gies., F.C.S., Messrs. Evans, Mercer & Co., 265, *Notre Dame-street, Montreal*.

- March 21, 1870 Edwards, Edward, (Smith, Edwards & Co.,) *Adelaide Buildings, 4, Chapel-street.*
- Oct. 29, 1866 Elliot, Adam, *Ashlea, Aigburth-road, and 7, Orange-court.*
- Feb. 24, 1868 Elliot, John, 35, *Peter's-Lane.*
- April 7, 1862 English, Charles J., 26, *Chapel-street, and 26, Falkner-square.*
- Feb. 18, 1866 Fairclough, Rev. R. J., M.A. Cantab., 44, *Irvine-street, Edge-hill.*
- *Dec. 13, 1852 Ferguson, William, F.L.S., F.G.S., 4, *South John-street, and 2, St. Aidan's-terrace, Birkenhead.*
- Feb. 9, 1863 Finlay, William, Senior Mathematical Master, Middle School, *Liverpool College, and 111, Shaw-street.*
- Oct. 1, 1866 Fletcher, Alfred E., F.C.S., H. M. Inspector of Alkali Works for the Western District; 21, *Overton-street, Edge-hill.*
- Nov. 26, 1866 Flueck, Christian, 4, *Dingle-hill, HON. LIBRARIAN.*
- *Mar. 19, 1855 Ford, James Thomas, 5, *Essex-ct., Temple, E.C.*
- *Feb. 6, 1854 Gee, Robert, M.D. Heidelb., M.R.C.P., Lecturer on Diseases of Children, Royal Infirmary School of Med.; Physician, Workhouse Hospital; 5, *Abercromby-square.*
- Feb. 20, 1865 Gordon, Rev. A., M.A., 49, *Upper Parliament-street.*
- Dec. 2, 1861 Graves, Samuel R., M.P., *Baltic-buildings, and The Grange, Wavertree.*
- Nov. 14, 1853 Greenwood, Henry, 32, *Castle-street, and Falkner-square.*
- Jan. 22, 1855 Hakes, James, M.R.C.S., Surgeon to the Northern Hospital, 80, *Hope-street.*
- Nov. 12, 1867 Halhead, W. B., 7, *Parkfield-road, Prince's Park.*
- Feb. 23, 1863 Hall, Charlton R., 17, *Dale-street.*
- Dec. 10, 1866 Hall, Hugh Fergie, (Charlton R. Hall & Co.) 17, *Dale-street, and Greenheys, Grove Road, Wallasey.*
- *Jan. 21, 1856 Hardman, Lawrence, 35, *Rock Park, Rock Ferry.*
- Nov. 15, 1869 Hartwig, Estevan H. L., 1, *Dale-street, and 14, Thackeray-street.*

- Feb. 6, 1865 Hassan, Rev. E., *Alma-terrace, Sandown-lane.*
- Nov. 13, 1865 Hayward, John Williams, M.D., 117, *Grove street.*
- Feb. 6, 1865 Hebson, Douglas, 13, *Tower-chambers*, and 58, *Bedford-street, South.*
- Dec. 28, 1846 Higgins, Rev. H. H., M.A. Cantab., F.C.P.S., *Rainhill*, EX-PRESIDENT.
- *Oct. 31, 1836 Higginson, Alfred, M.R.C.S., Surgeon Southern Hospital, 44, *Upper Parliament-street*, VICE-PRESIDENT.
- Mar. 22, 1869 Higgin, Thomas, 33, *Tower-buildings.*
- Nov. 16, 1863 Holden, Adam, 48, *Church-street*, and 2, *Carlton-terrace, Milton-road.*
- March 9, 1868 Holme, James, jun., 109, *Mount Pleasant.*
- *Dec. 14, 1862 Holt, Robert Durning, 6, *India-buildings*, and 29, *Edge-lane.*
- *Nov. 13, 1854 Hunter, John, Member Hist. Society, Pennsylvania, *Halifax, Nova Scotia.*
- Jan. 26, 1857 Hutton, David, 3, *St. George's-crescent*, and 61, *Canning-street.*
- *April 29, 1850 Ihne, William, Ph. D. Bonn., *Villa Felseck, Heidelberg*, EX-PRESIDENT.
- Feb. 23, 1857 Imlach, Henry, M.D. Edin., 1, *Abercromby-square.*
- *Oct. 21, 1844 Inman, Thomas, M.D. Lond., M.R.C.P., Physician Royal Infirmary, 12, *Rodney-street*, EX-PRESIDENT.
- Nov. 28, 1864 Jeffery, F. J., *Compton House*, and *Woolton Hall, Woolton.*
- Feb. 8, 1869 Jeffery, J. R., *Compton House*, and *Woolton Hall, Woolton.*
- Mar. 10, 1862 Johnson, Richard, *Queen Insurance Buildings*, and *Blundell Sands.*
- Jan. 26, 1863 Johnson, Richard, jun., *Queen Insurance-buildings.*
- Feb. 24, 1868 Jones, Charles W., *The Nook, Gateacre.*
- Nov. 26, 1866 Jones, Edward, B.A., Head Master of Hibernian School.
- *April 4, 1852 Jones, Morris Charles, F.S.A., F.S.A. Scot., 20, *Abercromby-square.*

- May 5, 1851 Jones, Roger Lyon, *Liverpool and London-chambers, Exchange, and 6, Sunnyside, Prince's Park.*
- Oct. 18, 1869 Jones, Wm. Bolton, 21, *South Castle-street.*
- Oct. 2, 1865 Kendal, Robinson, 5, *Canning-street.*
- Nov. 12, 1866 Kennedy-Moore, Rev. W., M.A., 151, *Canning-st.*
- April 4, 1870 Kenion, Hubert, 2, *Blackburn-place, Hope-street.*
- Nov. 15, 1869 Kent, W. K., (Thompson, Grindrod & Co.), 7, *Cook-street.*
- Nov. 15, 1869 King, Jos., 13, *Exchange Alley, W., and Trelearen House, Blundell Sands.*
- Nov. 1, 1869 Kinsman, W. N., 8, *Derwent-road, Stonycroft.*
- Jan. 10, 1848 Lamport, William James, 21, *Water-street, and New Brighton.*
- *Jan. 14, 1839 Lassell, William, F.R.SS. L. and E., F.R.A.S., 27, *Milton-street, and 58, Wapping.*
- April 27, 1862 Lassell, William, jun., 27, *Milton-street, and Tuebrook.*
- Oct. 21, 1844 Lear, John, 14, *Cook-street, and 22, Holland-terrace, Duke-street, Edge-hill.*
- Dec. 10, 1860 Leyland, Joseph, *Williamson-square.*
- Nov. 2, 1868 Lloyd, James, Vice Consul, Argentine Confederation, 150, *Chatham-street.*
- *Oct. 21, 1844 M'Andrew, Robert, F.R.S., F.L.S., *Isleworth House, Isleworth, London, EX-PRESIDENT.*
- April 17, 1865 MacCheane, Wm., M.R.C.S., 47, *Shaw-street.*
- March 9, 1857 MacFie, Robert Andrew, M.P., *Leith Offices, Moorfields, and Ashfield Hall, Neston, Cheshire.*
- Oct. 4, 1869 Macalister, W. B., (National Steam Navigation Co., Water St.), 18, *Alexandra Terrace, Princes-road.*
- April 2, 1866 McMullen, Rev. James A., M.A., 106, *Exmouth-street, Birkenhead.*
- April 20, 1863 Marples, David, 50B, *Lord-street, and 88, Euston-grove, Cloughton.*
- Feb. 24, 1868 Marsh, Jno., *Rann Lee, Rainhill.*
- Jan. 21, 1839 Martin, Studley, 30, *Exchange, and 109, Bedford-street, South.*
- Feb. 5, 1844 Mayer, Joseph, F.S.A., F.R.A.S., F.E.S., 68, *Lord-st., and Pennant's House, Lower Bebington.*

- *Oct. 21, 1867 Muspratt, E. K., *New Hall, 41, Old Hall-street, and Seaforth Hall, Seaforth.*
- Oct. 31, 1859 Moore, Thomas John, Corr. Mem. Z.S., Curator Free Public Museum, *William Brown-street.*
- Nov. 2, 1868 Moore, J. Murray, M.D. Edin., 6, *Oxford-street.*
- Nov. 15, 1869 Morgan, Alfred, *Victoria Park, Wavertree.*
- Jan. 8, 1855 Morton, George Highfield, F.G.S., 9, *London-road.*
- April 16, 1849 Moss, Rev. John James, B.A., *Upton, Cheshire.*
- Oct. 29, 1850 Mott, Albert Julius, *Church-street, and Sandfield, Waterloo,* HON. TREASURER.
- April 3, 1854 Mott, Charles Grey, 27, *Argyle-street, Birkenhead, and Cavendish Road, Birkenhead Park.*
- Nov. 27, 1865 Mountfield, William B., 12, *St. James's Road.*
- Nov. 2, 1868 M'Coskry, W., 14, *Cook-street.*
- Mar. 21, 1870 M'Quie, P. B., 12, *Preeson's-row, and Blundell Sands.*
- Oct. 20, 1856 Nevins, John Birkbeck, M.D. Lond., M.R.C.S., Lecturer on Materia Medica, Royal Infirmary School of Medicine, 3, *Abercromby-square,* PRESIDENT.
- April 7, 1862 Newlands, A., 5, *Brown's-buildings, and 19, Peel-terrace, Upper Canning-street.*
- Feb. 6, 1865 Newton, John, M.R.C.S., 20, *Marmaduke-street, Edge-hill.*
- *Nov. 29, 1847 Nisbet, William, F.L.P.S.G., *Church-st., Egremont.*
- Nov. 2, 1868 Norrie, Rev. B. A. W., *Rainhill.*
- *Oct. 15, 1855 North, Alfred, 20, *York Crescent, Clifton, Bristol.*
- Nov. 18, 1861 Nugent, Rev. James, *Crosby.*
- Dec. 10, 1866 Owen, Peter, (Farnworth & Jardine,) *Liverpool and London Chambers.*
- Feb. 21, 1870 Packer, James Macnamara, M.D., *Rose Cottage, Poplar Bank, Huyton.*
- Nov. 4, 1861 Philip, Thomas D., 49, *South Castle street, and Holly-road, Fairfield.*
- Dec. 28, 1846 Pieton, James Alanson, F.S.A., Chairman of the Library and Museum Committee, 11, *Dale-st., and Sandy-knowe, Wavertree,* EX-PRESIDENT.
- April 30, 1866 Praag, Rev. James, 35, *Mount-street.*

- March 8, 1869 Parratt, Thos. P., 3, *Belvidere-road, Prince's-park.*
- *Jan. 22, 1866 Raffles, William Winter, 54, *Brown's-buildings, and Sunnyside, Prince's Park.*
- Nov. 12, 1860 Rathbone, Philip H., *Liverpool and London Chambers (H), and Greenbank-cottage, Wavertree.*
- Mar. 24, 1862 Rathbone, Richard Reynolds, 11, *Rumford-street, and Beechwood House, Grassendale.*
- *Jan. 7, 1856 Rawlins, Charles Edward, jun., 7, *Chapel-walks, and 1, Windermere-terrace, Prince's Park.*
- *Nov. 17, 1851 Redish, Joseph Carter, 6, *Dingle-lane.*
- Nov. 29, 1869 Roberts, Isaac, *Oak Villa, Rock-park, Rock Ferry.*
- Feb. 4, 1867 Robinson, Joseph F., 9, *Orange-court.*
- Oct. 4, 1869 Rogers, J. Frederick, (Dart & Rogers,) *The Temple, Dale-st., and 17, Grove-park, Lodge-lane.*
- Dec. 13, 1869 Roulston, Robt. W., 44, *Castle-street.*
- April 18, 1854 Rowe, James, 16, *South Castle-street, and 105, Shaw-street.*
- Feb. 20, 1865 Samuel, Albert H., (Evans, Son, & Co.,) *Wood-street, and Canning-terrace, Upper Parliament street.*
- April 7, 1862 Samuel, Harry S., 11, *Orange-court, and 2, Canning-street.*
- Mar. 19, 1866 Sephton, Rev. John, M.A., *Liverpool Institute.*
- Nov. 2, 1868 Sharp, Charles, *Liverpool Institute.*
- Nov. 16, 1863 Sheldon, E. M., M.R.C.S., 223, *Boundary-street.*
- Oct. 29, 1866 Shimmin, Hugh, 56, *Cable-street, and Tue-brook, West Derby.*
- Nov. 2, 1863 Skillicorn, John E., 7, *The Willows, Breck-road.*
- Nov. 7, 1864 Skinner, Thomas, M.D. Edin., 1, *St. James's-road.*
- *April 21, 1862 Smith, James, *Barkeley House, Seaforth, and 7, Water-street.*
- Feb. 23, 1863 Smith, J. Simm, *Royal Insurance Office, North John-street.*
- Dec. 10, 1866 Smith, Elisha, (Henry Nash & Co.) 5, *India-buildings.*
- April 4, 1870 Smith, James, 11, *Lord-street.*
- Feb. 24, 1862 Snape, Joseph, Lecturer on Dental Surgery, Royal Infirmary School of Medicine, 75, *Rodney st.*

- Nov. 12, 1860 Spence, Charles, 4, *Oldhall-street*.
- Feb. 10, 1862 Spence, James, 18, *Brown's Buildings, Exchange,*
and 10, *Abercromby-square*.
- Nov. 27, 1865 Spola, Luigi, LL.D., 85, *Boundary-lane, West*
Derby-road.
- Nov. 29, 1869 Statham, H. H. jun., 5, *Batavia Buildings,*
Hackins Hey.
- Jan. 13, 1868 Stearn, C. H., 3, *Eldon-terrace, Rock Ferry*.
- Dec. 14, 1857 Steele, Robert Topham, 4, *Water-street, and*
Wavertree.
- Jan. 9, 1865 Stewart, Robert E., L.D.S., R.C.S., Dental Sur-
geon Southern Hospital, and Liverpool Dental
Hospital, 37, *Rodney-street*.
- Oct. 18, 1858 Stuart, Richard, 11, *Manchester-buildings, and*
Brooklyn Villa, Breeze-hill, Walton.
- Dec. 13, 1869 Tate, Alexander Norman, 7, *Irwell Chambers,*
Fazakerley-street, Old Hall-street.
- *Feb. 19, 1855 Taylor, John Stopford, M.D. Aberd., F.R.G.S., 1,
Springfield, St. Anne-street.
- Jan. 23, 1843 Taylor, Robert Hibbert, M.D. Edin., L.R.C.S. Ed.,
Lect. on Ophthalmic Medicine, Royal Infirmary
School of Medicine, 1, *Percy-street*.
- Nov. 17, 1850 Tinling, Chas., 44, *Cable-street, and 29, Onslow*
Road, Elm Park.
- Dec. 1, 1851 Towson, John Thomas, F.R.G.S., Scientific
Examiner Sailors' Home, 47, *Upper Parlia-*
ment-street.
- Jan. 7, 1867 Trimble, Robt., *Cuckoo-lane, Little Woolton*.
- *Feb. 19, 1844 Turnbull, James Muter, M.D. Edin., M.R.C.P.,
Physician Royal Infirmary, 86, *Rodney-street*.
- Oct. 21, 1861 Unwin, William Andrew, 11, *Rumford-place*.
- Oct. 21, 1844 Vose, James Richard White, M.D. Edin., F.R.C.P.,
Physician Royal Infirmary, 5, *Gambier-terrace*.
- Mar. 18, 1861 Walker, Thomas Shadford, M.R.C.S., 82, *Rodney-*
street.
- Jan. 27, 1862 Walmsley, Gilbert G., 50, *Lord-street*.
- Jan. 9, 1865 Walthew, William, *Phanix Chambers, and Vine*
Cottage, Aughton.
- Dec. 13, 1869 Waterhouse, Harold, 37, *Catherine-street*.

- April 4, 1870 Waugh, John, *Gas-works, Southport.*
Dec. 2, 1861 Weightman, William Henry, *Leith-offices, Moor-
fields, and Cambridge-road, Seaforth.*
April 7, 1862 Whittle, Ewing, M.D., Lecturer on Med. Juris-
prudence, Royal Inf. School of Medicine, 77A,
Upper Parliament-street.
Jan. 13, 1868 Whitworth, Rev. W. A., B.A., 185, *Islington.*
Mar. 18, 1861 Wood, Geo. S., 20, *Lord-street, and Bellevue-
road, Wavertree.*

HONORARY MEMBERS,

LIMITED TO FIFTY.

- 1.—1819 John Stanley, M.D. Edin., *Whitehaven*.
- 2.—1827 Rev. William Hincks, F.R.S.E., F.L.S., Professor of Natural History in University College, *Toronto, C.W.*
- 3.—1833 The Right Hon. Dudley Ryder, Earl of Harrowby, K.G., D.C.L., F.R.S., *Sandon-hall, Staffordshire*, and 39, *Grosvenor-square, London, W.*
- 4.—1833 James Yates, M.A., F.R.S., F.L.S., F.G.S., &c., *Lauderdale House, Highgate, London*.
- 5.—1836 The Most Noble William, Duke of Devonshire, K.G., M.A., F.R.S., F.G.S., &c., Chancellor of the University of Cambridge, *Devonshire House, London, W.*, and *Chatsworth, Derbyshire*.
- 6.—1838 George Biddell Airy, M.A., D.C.L., F.R.S., Hon. F.R.S.E., Hon. M.R.I.A., V.P.R.A.S., F.C.P.S., &c., Astronomer Royal, *Royal Observatory, Greenwich*.
- 7.—1840 James Nasmyth, F.R.A.S., *Penshurst, Kent*.
- 8.—1840 Richard Duncan Mackintosh, L.R.C.P., *Exeter*.
- 9.—1841 Charles Bryce, M.D. Glasg., Fell.F.P.S.G., *Brighton*.
- 10.—1844 T. P. Hall, *Coggleshall, Essex*.
- 11.—1844 Peter Rylands, *Warrington*.
- 12.—1844 John Scouler, M.D., LL.D., F.L.S., *Glasgow*.
- 13.—1844 Thomas Rymer Jones, F.R.S., F.Z.S., F.L.S., Professor of Comparative Anatomy, *King's College, London*.
- 14.—1844 Robert Patterson, F.R.S., M.R.I.A., *Belfast*.
- 15.—1854 Sir Charles Lemon, Bart., M.A. Cantab., F.R.S., F.G.S., *Penrhyn, Cornwall*.
- 16.—1844 William Carpenter, M.D. Edin., F.R.S., F.L.S., F.G.S., Registrar, *London University*.
- 17.—1848 Rev. Thomas Corser, M.A., *Strand, Bury*.
- 18.—1850 Rev. St. Vincent Beechy, M.A. Cantab., *Worsley, near Eccles*.

- 19.—1851 James Smith, F.R.SS.L. and E., F.G.S., F.R.G.S.,
Jordan-hill, Glasgow.
- 20.—1851 Henry Clarke Pidgeon, *London.*
- 21.—1851 Rev. Robert Bickersteth Mayor, M.A., Fell. St. John's
College, Cantab., F.C.P.S., *Rugby.*
- 22.—1852 William Reynolds, M.D., *Coed-du, Denbighshire.*
- 23.—1853 Rev. James Booth, LL.D., F.R.S., &c., *Stone, near*
Aylesbury.
- 24.—1857 Thomas Jos. Hutchinson, F.R.G.S., F.R.S.L., F.E.S.,
H.B.M. Consul, *Rosario.*
- 25.—1861 Louis Agassiz, Professor of Natural History in Harvard
University, *Cambridge, Massachusetts.*
- 26.—1861 Sir William Fairbairn, Bart., LL.D., C.E., F.R.S.,
Polygon, near Manchester.
- 27.—1861 Rev. Thomas P. Kirkman, M.A., F.R.S., *Croft Rectory,*
Warrington.
- 28.—1862 The Right Rev. H. N. Staley, D.D., Bishop of Hono-
lulu, *Sandwich Islands.*
- 29.—1863 Edward J. Reed, *Hyde Vale, Greenwich, S.E.*
- 30.—1865 John Edward Gray, Ph. D., F.R.S., &c., *British*
Museum.
- 31.—1865 George Rolleston, M.D., F.R.S., Linacre Professor of
Physiology in the University of Oxford,
Oxford.
- 32.—1865 Cuthbert Collingwood, M.A. and M.B. Oxon, F.L.S.
- 33.—1867 J. W. Dawson, LL.D., F.R.S., F.G.S., &c., Principal
and Vice-Chancellor of McGill University,
Montreal.
- 34.—1868 Captain Sir James Anderson, *Atlantic Telegraph Com-*
pany, London.

CORRESPONDING MEMBERS.

LIMITED TO THIRTY-FIVE.

- 1.—1867 Albert C. L. G. Günther, M.A., M.D., Ph.D., British Museum, Editor of the "Zoological Record."
- 2.—1867 J. Yate Johnson, *London*.
- 3.—1867 R. B. N. Walker, *Gaboon, West Africa*.
- 4.—1868 Rev. J. Holding, M.A., F.R.G.S., *London*.
- 5.—1868 Geo. Hawkins, *Colombo, Ceylon*.
- 6.—1868 J. Lewis Ingram, *Bathurst, River Gambia*.
- 7.—1869 Geo. Mackenzie, *Cebu, Philippine Islands*.
- 8.—1870 Rev. Joshua Jones, D.C.L., King William's College, *Isle of Man*.

ASSOCIATES.

LIMITED TO TWENTY-FIVE.

- 1.—Jan. 27, 1862 Captain John H. Mortimer, "America," (Atlantic).
- 2.—Mar. 24, 1862 Captain P. C. Petrie, "City of London," Commodore of the Inman Line of American Steam Packets. (Atlantic.)
- 3.—Feb. 9, 1863 Captain James P. Anderson, R.M.S.S. "Africa," Cunard Service. (Atlantic.)
- 4.—Feb. 9, 1863 Captain John Carr, (Bushby and Edwards,) ship "Scindia." (Calcutta.)
- 5.—Feb. 9, 1863 Captain Charles E. Price, R.N.R., (L. Young and Co.,) ship "Cornwallis." (Calcutta and Sydney.)
- 6.—April 20, 1863 Captain Fred. E. Baker, ship "Nippon." (Chinese Seas.)

- 7.—Oct. 31, 1864 Captain Thompson, ship "Admiral Lyons."
(Bombay.)
- 8.—Oct. 31, 1864 Captain Alexander Browne, (Papayanni,
S. S. "Agia Sofia." (Mediterranean.)
- 9.—Oct. 31, 1864 Captain Whiteway, ship "Annie Chesshyre."
(Pacific.)
- 10.—April 13, 1865 Captain Alexander Cameron, (Boult, Eng-
lish, and Brandon,) ship "Staffordshire."
(Shanghai.)
- 11.—Dec. 11, 1865 Captain Walker, ship "Trenton."
- 12.—Mar. 23, 1868 Captain David Scott.
- 13.—Oct. 5, 1868 Captain Cawne Warren.
- 14.—Oct. 5, 1868 Captain Perry.
- 15.—Mar. 22, 1869 Captain Robert Morgan, ship "Robin Hood."

DONATIONS TO THE LIBRARY.

FIRST MEETING, 18TH OCTOBER, 1869.

Donations.	Donor.
Abolition of Patents; Recent Discussions in the United Kingdom and on the Continent . . .	<i>Mr. Macfie.</i>
Memoirs of the Literary and Philosophical Society of Manchester, vol. 3, Third Series . . .	<i>The Society.</i>
Proceedings of the Literary and Philosophical Society of Manchester, vols. 5, 6, 7	<i>The Society.</i>
Transactions of the Historic Society of Lancashire and Cheshire, vol. 8, 1867-68	<i>The Society.</i>
Journal of the Royal Asiatic Society, vol. 4, part 1 (Trübner)	<i>The Society.</i>
Proceedings of the Scientific Meetings of the Zoolo- gical Society, London, 1868, part 3, June and December	<i>The Society.</i>
Journal of the Royal Geographical Society, vol. 29	<i>The Society.</i>
Journal of the Society of Arts, nos. 858 to 881, inclusive	<i>The Society.</i>
Report of the British Association, 1868, Norwich .	<i>Dr. Inman.</i>
Ancient Faiths Embodied in Ancient Names, vol. 2, by Dr. Inman	<i>The Author.</i>
Proceedings of the American Philosophical Society, vol. 2, no. 81 (Philadelphia)	<i>The Society.</i>
Abstract of the Proceedings of the Liverpool Geolo- gical Society, 1868-69	<i>The Society.</i>
Journal of the Chemical Society, May to September, 1869	<i>The Society.</i>
Canadian Journal (Toronto, Canadian Institute) .	<i>The Institute.</i>

- Thirty-sixth Annual Report, Royal Cornwall Polytechnic Society, 1868 (Falmouth) *The Society.*
- Journal of the Statistical Society of London, June, 1869–September, 1869 *The Society.*
- Proceedings of the Royal Geological Society, vol. 13, nos. 2, 3, 4 *The Society.*
- Proceedings of the Meteorological Society, vol. 4, nos. 42, 43, 44 *The Society.*
- Proceedings of the Royal Society, vol. 17, nos. 111, 112, 113 *The Society.*
- Monthly Notices of the Royal Astronomical Society, vol. 29, nos. 6, 7, 8 *The Society.*
- Anthropological Review, July to October, 1869 *The Society.*
- Journal of the East India Association, 55, Parliament Street, vol. 3, no. 2 *The Society.*
- Journal Linnæan Society, vol. 10, no. 46, Zoology; vol. 11, nos. 50 and 51, Botany *The Society.*
- Proceedings of the Liverpool Philomathic Society, 1868–69 *The Society.*
- Annual Report of the Trustees of the Museum of Comparative Zoology, at Harvard College, 1868, Boston *The Trustees.*
- Journal of the Franklin Institute, for March, April, June, July, 1869 *The Institute.*
- Hull Royal Institution Report, and Proceedings of the Hull Literary and Philosophical Society, 1869 *The Society.*
- Journal of the Scottish Meteorological Society, for April and July, 1869 *The Society.*
- Proceedings of the Liverpool Architectural and Archæological Society *The Society.*
- Journals of the Liverpool Polytechnic Society *The Society.*
- Proceedings of the Zoological Society (London), 1869, January to March *The Society.*
- Canadian Naturalist and Geologist, June to December, 1868 *The Society.*

SECOND MEETING, 1ST NOVEMBER, 1869.

Journal of the Society of Arts, nos. 882-884 . . .	<i>The Society.</i>
Greenwich Observations, 1867 . . .	<i>The Observatory.</i>
Proceedings of the Royal Institution of Great Britain, vol. 5, parts 5 and 6 . . .	<i>The Institution.</i>
List of Members, and Report of ditto, 1868-69 . . .	<i>The Institution.</i>
Journal of the Chemical Society, October . . .	<i>The Society.</i>
Proceedings of the Royal Society, vol. 18, no. 144 . . .	<i>The Society.</i>
Monthly Notices, Royal Astronomical Society, vol. 29, no. 9 . . .	<i>The Society.</i>
Journal of the Royal Dublin Society, no. 38 . . .	<i>The Society.</i>
Smithsonian Report, 1867 . . .	<i>The Institute.</i>
Catalogue of the Orthoptera of North America (Smithsonian Collection) . . .	<i>The Institute.</i>
Report of the National Academy of Sciences at Washington . . .	<i>The Academy.</i>
Journal of the Franklin Institute, August . . .	<i>The Institute.</i>
Forty-ninth Annual Report of the Board of Con- trollers of Public Schools, First School District, Pennsylvania, 1867 . . .	<i>The Board.</i>
Proceedings of the Essex Institute, Salem, vol. 5, nos. 7, 8 . . .	<i>The Institute.</i>
Annals of the Lyceum of Natural History of New York, April . . .	<i>The Lyceum.</i>
Proceedings of the American Society at Philadelphia, vol. 10, nos. 78, 79 . . .	<i>The Society.</i>
Proceedings of the American Academy of Arts and Sciences, conclusion of vol. 7 . . .	<i>The Academy.</i>
Proceedings of the Boston Society of Natural History, first part of vol. 12 . . .	<i>The Society.</i>
Occasional Papers of ditto (Harris' Entomological Correspondence) . . .	<i>The Society.</i>
Memoirs of ditto, vol. 1, part 4 . . .	<i>The Society.</i>

Reale Istituto Lombardo di Scienze e Lettere, Rendiconti, vol. 1, nos. 1-20; vol. 2, nos. 1-10	<i>The Institute.</i>
Solenni Adunanze del R. Istituto, vols. 1-5	<i>The Institute.</i>
Memorie ditto, vol. 11	<i>The Institute.</i>

THIRD MEETING, 15TH NOVEMBER, 1869.

Proceedings of the Linnæan Society of London, Session 1868-69	<i>The Society.</i>
Proceedings, Liverpool Chatham Society, Architectural and Archæological Society, and Polytechnic Society	<i>The Societies.</i>
Essay on Hydro-fluoric Acid, by G. Gore, F.R.S., Birmingham	<i>The Author.</i>
Journal of the Royal Geological Society of Ireland, vol. 12, part 2	<i>The Society.</i>
Seventeenth Annual Report of the Public Free Libraries of Manchester	<i>The Mayor and Corporation.</i>
Journal of the Society of Arts, nos. 885, 886	<i>The Society.</i>
Annual Report of the Leeds Philosophical and Literary Society, 1868-69	<i>The Society.</i>

FOURTH MEETING, 29TH NOVEMBER, 1869.

Annual Report and Transactions of the Plymouth Institution, and Devon and Cornwall Natural Historic Society, vol. 3, part 2, 1868-69	<i>The Institution.</i>
Journal of the Society of Arts, 886-887	<i>The Society.</i>

Clinical Society's Transactions, vol. 2	<i>The Society.</i>
Journal of the Chemical Society, November, 1869	<i>The Society.</i>
Liverpool Medical and Surgical Reports, October, 1869	<i>The Editors.</i>
Clark's Ante-Nicene Library:	
The Writings of Methodius, &c.	<i>Mr. Macfie.</i>
Works of Tertullian, vol. 1	<i>Mr. Macfie.</i>
Clement of Alexandria, vol. 2	<i>Mr. Macfie.</i>
Writings of Cyprian, vol. 2	<i>Mr. Macfie.</i>

FIFTH MEETING, 13TH DECEMBER, 1869.

Journal of the Franklin Institute, September and October, 1869	<i>The Institute.</i>
Proceedings of the Royal Geographical Society, vol. 13, no. 5	<i>The Society.</i>
Memorie del Reale Istituto Lombardo, vol 11	<i>The Institute.</i>
Ditto Rendiconti, vol. 2, parts 2, 16	<i>The Institute.</i>
Hongl. Vetenskaps Akademien Stockholm-Handlingar Ny följd, bd. 1865-67	<i>The Academy.</i>
Hongl. Ofversigt, bd. 1865-68	<i>The Academy.</i>
Lefnadsteckningar, vol. 1, part 1	<i>The Academy.</i>
Nordenskiöld's Sketch of the Geology of Spitzbergen	<i>The Author.</i>
Igelström's Rock of Nullaberg	<i>The Author.</i>
Lindström's Gotlands Mollusker	<i>The Author.</i>

SIXTH MEETING, 10TH JANUARY, 1870.

Journal of the Scottish Meteorological Society, October	<i>The Society.</i>
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Journal of the Chemical Society, December . . .	<i>The Society.</i>
Journal of the Society of Arts, nos. 889–893 . . .	<i>The Society.</i>
Canadian Journal of Industry, &c., November	<i>Canadian Institute.</i>
Proceedings of the Royal Society, vol. 18, no. 115 . . .	<i>The Society.</i>
Monthly Notices of the Royal Astronomical Society,	
vol. 3, no. 1	<i>The Society.</i>
Seventeenth Report of the Liverpool Free Library,	
&c.	<i>Mayor and Corporation.</i>
Journal of the Liverpool Polytechnic Society . . .	<i>The Society.</i>

EIGHTH MEETING, 7TH FEBRUARY, 1870.

Journal of the Chemical Society, January . . .	<i>The Society.</i>
Proceedings of the Meteorological Society, vol. 5,	
no. 45	<i>The Society.</i>
Journal of the Society of Arts, nos. 894–896 . . .	<i>The Society.</i>
Journal of the Statistical Society, December . . .	<i>The Society.</i>
Monthly Notices of the Royal Astronomical Society .	<i>The Society.</i>
Transactions of the Royal Scottish Society of Arts,	
vol. 8, part 1	<i>The Society.</i>
Transactions of the Liverpool Chemists' Association,	
1868 and 1869	<i>The Association.</i>
Fra Det Hongelige Norske Universitet i Christiania	
ved Universitetets Secretaire	<i>The University.</i>
Forslag til en forandret Ordning af det Hoire . . .	<i>The University.</i>
Skolevæsen, 1867. Anden del	<i>The University.</i>
Skolevæsen, 1867. Tredie del	<i>The University.</i>
Ungedruckte und wenig beachtete Quellen zur	
Geschichte des Taufsymbols und der Glaubens-	
regel, von Dr. C. P. Caspari	<i>The University.</i>
Det Hongelige Norske Frederiks Universitets, 1868	<i>The University.</i>
Norkinskinna-Pergamentsbog fra forste Halvdel af	
det Trettende Aarhundrede. C. R. Unger.	<i>The University.</i>

- La Glacier de Boium, par S. A. Sesxe, July, 1868 *The University.*
 Proceedings of the Society of Antiquaries, London,
 vol. 4, nos. 3, 4, 5 and 6 *The Society.*
 Journal of the Linnæan Society, December and
 January *The Society.*
 Proceedings of the Linnæan Society, November . *The Society.*
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TENTH MEETING, 7TH MARCH, 1870.

- Journal of the Society of Arts, nos. 897-901 . . . *The Society.*
 Transactions of the Edinburgh Geological Society,
 vol. 1, part 3 *The Society.*
 Second Radcliffe Catalogue of Stars for 1860
 Radcliffe Trustees, Oxford.
 Proceedings of the Royal Society, vol. 18, no. 116 . *The Society.*
 Journal of the Franklin Institute, November and
 December, 1869 *The Institute.*
 Proceedings of the Meteorological Society, vol. 5,
 no. 46 *The Society.*
 Microscopic Objects, no. 1 *Mr. Van Voorst.*
 Monthly Notices of the Royal Astronomical Society,
 vol. 30, no. 3 *The Society.*
 Proceedings of the Liverpool Architectural and
 Archæological Society, December and January . *The Society.*
 Forty-fifth Report Liverpool Institute . . . *The Directors.*
 Memoire sur la Subsaturation par M. Lecoq de
 Boisbaudran *Mr. Unwin.*
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ELEVENTH MEETING, 21ST MARCH, 1870.

- Journal of the Society of Arts, nos. 902, 903 . . . *The Society.*

Journal of the Chemical Society, February . . .	<i>The Society.</i>
Proceedings of the Royal Society of Edinburgh, 1868 and 1869	<i>The Society.</i>
Anthropological Memoirs, vol. 3	<i>The Society.</i>
Memoir of Charles Wye Williams, M. Institute C.E., Excerpt from Annual Report of Civil Engineers	<i>Rev. W. Banister.</i>

TWELFTH MEETING, 4TH APRIL, 1870.

Journal of the Society of Arts, 903-905 . . .	<i>The Society.</i>
Journal of the Chemical Society, March . . .	<i>The Society.</i>
Proceedings of the Royal Geographical Society, vol. 14, no 1	<i>The Society.</i>
Journal of the Royal Asiatic Society, vol. 4, part 2 .	<i>The Society.</i>
Monthly Notices of the Royal Astronomical Society, vol. 30, no. 4	<i>The Society.</i>
Proceedings of the Royal Society, vol. 18, no. 117 .	<i>The Society.</i>
Journal of the Scottish Meteorological Society, no. 25	<i>The Society.</i>

TREASURER'S ACCOUNT, 1868-69.

The Literary and Philosophical Society, in Account with ALBERT J. MOTT, Treasurer, to October, 1869. Cr.

	£	s.	d.
To paid Mr. Marmes, for Printing	96	13	3
Mr. Tindling, for Printing and Stationery	12	11	0
Secretary's Expenses, postage, &c.	10	6	6
Editorial Fee	10	10	0
Mrs. Johnson, for Tea, Coffee, &c.	23	3	10
Delegates to British Association	15	0	0
Testimonial presented to Charles Dickens	15	15	0
Annual Dinner, balance over receipts	4	18	6
Collector's Commission	8	1	6
Waiters' Attendance	2	12	6
Roekell & Co. 6/6, Longman & Co. 1/9	0	8	3
	200	0	4
Balance carried down	316	9	7

	£	s.	d.
By Balance from last Account—			
Dock Bonds	£250	0	0
In Treasurer's hands	58	17	6
10 Entrance Fees	308	17	6
158 Annual Subscriptions	5	5	0
2 Half ditto	165	18	0
23 Arrears	1	1	1
Interest upon Dock Bonds, less Income Tax	24	3	0
	11	5	5

	£	s.	d.
Balance brought down—			
Dock Bonds	£250	0	0
In Treasurer's hands	66	9	7
	£316	9	7

	£	s.	d.
Errors excepted.			
Andited and found correct, { C. FLUECK.			
{ E. DAVIES.			

PROCEEDINGS
OF THE
LIVERPOOL
LITERARY AND PHILOSOPHICAL SOCIETY.

ANNUAL MEETING—FIFTY-NINTH SESSION.

ROYAL INSTITUTION, 4TH OCTOBER, 1869.

JOHN BIRKBECK NEVINS, M.D., PRESIDENT, in the
Chair.

The new President was formally installed in his office by the retiring President (the Rev. Dr. Ginsburg), with a few brief congratulatory observations.

The minutes of the last meeting were then read and confirmed, after which

The HONORARY SECRETARY read the following

REPORT.

The fifty-eighth report, which the Council of the Literary and Philosophical Society now present to the Members, is a record of the continuation of that success which has uniformly attended the Society's proceedings for many years past.

The value and character of the papers contained in the

volume of Proceedings, which will shortly be published, fully maintain the standing and reputation of the Society; and as some of these are by authors whose names have not previously appeared in this capacity in the Society's publications, the Council feel they are justified in congratulating the Members upon so good a sign of continued health and vigour. The attendance of Members at the meetings has also been large, and the discussions which followed have been spirited and able.

The number of Ordinary Members on the Society's roll has been slightly reduced, but is considerably above the average for the last seven years. There are two hundred names in this class; at the close of last session there were two hundred and seven; the number withdrawn was twenty; that of new names added, thirteen.

Four names will be found removed from the list of Honorary Members—those of W. Ewart, M. P., Geo. Patten, A. R. A., the Rev. Brook Aspland, A. R. A., and Professor Jukes, who are deceased. Another Honorary Member also has died since the list was printed off, Professor Roget, who was the only original Member remaining on the Society's roll. One Honorary Member's name has been added under circumstances of special distinction—that of Charles Dickens. The Society thus contains thirty-five Honorary Members.

The class of Corresponding Members, being of recent origin, is still small, but it is that department by which the Society is best enabled to obtain direct information in natural and geographical science from explorers themselves, and to maintain intercourse with scientific men.

One of the most efficient departments of the Society is the class of Associates, to whom the Members are in a great measure indebted for the numerous specimens of marine zoology which have been exhibited at the meetings of the past session. This class contains sixteen names.

From this brief review of the various sections of the Society, it will be seen that the Council have ample ground for the opinions they have now expressed regarding the present position of this Society. They have, however, an additional cause for congratulation, in the fact that, owing to the united efforts of this and the kindred societies, together with the interest of the Mayor and Town Council, the British Association has at length determined to hold its next annual meeting in Liverpool. This event will doubtless confer many material benefits upon the Society, and add fresh impulse to the vigour of its exertions; and your Council feel assured that the Officers and Members will relax none of their energies to render the Meeting an honour to the town, and worthy of such a distinguished scientific body. On the last occasion when the Association met in Liverpool, viz., in 1854, this Society voted £50 to the funds of the Local Committee, and they now recommend a repetition of the gift. A revised copy of the laws has been printed, and will be placed in the hands of the Members with the distribution of the new volume. Three of the alterations made will contribute very materially to the Society's efficiency: the library will become more available to the Members by the appointment of a Librarian; the proceedings of the annual meeting will derive additional interest from the President's inaugural address; and the difficulty so often felt in the election of Members of Council will be removed by the enlargement of the managing body.

The change made last session in the time of holding the annual dinner was found so acceptable, that the Council recommend its celebration again under the same circumstances.

In conclusion, the Council now recommend the following five gentlemen for election on the new Council, according to the 41st Law:—Rev. W. Banister, B.A., James Birch,

Rev. A. Gordon, M.A., J. C. Redish, Rev. J. Sephton, M.A.

It was then moved by Mr. J. C. Redish, and seconded by the Rev. E. Hassan, that the Report now read be received and adopted by the Society, which was carried unanimously.

Referring to the proposed grant of funds in this Report, it was then moved by Mr. Redish, seconded by Mr. Arnold Baruchson, and carried unanimously—"That the Treasurer be authorised to pay £50 out of the funds of this Society, as a contribution towards the entertainment of the British Association, at their next annual meeting, to be held in Liverpool."

Mr. A. J. Mott, the Honorary Treasurer, was next called upon to read the annual statement of accounts, which had been duly audited by Messrs. Davies and Flück. This statement was approved of, and passed unanimously, on the motion of the Rev. H. H. Higgins, seconded by Mr. A. E. Fletcher.

The Society next proceeded to the election of the office-bearers for the ensuing year, when the following gentlemen were duly appointed.

Vice-Presidents :

Mr. ALFRED HIGGINSON, M. R. C. S.,
Mr. ARNOLD BARUCHSON,
Mr. HENRY DUCKWORTH.

Hon. Treasurer :

Mr. ALBERT J. MOTT.

Hon. Secretary :

Mr. JAMES BIRCHALL.

Hon. Librarian :

Mr. CHRISTIAN FLUECK.

Members of Council:

Rev. W. BANISTER, B. A.,
 Mr. JAMES BIRCH,
 Rev. A. GORDON, M. A.,
 Mr. JOSEPH CARTER REDISH,
 Rev. J. SEPHTON, M. A.,
 Rev. W. KENNEDY-MOORE, M. A.,
 Rev. WALTER LOWE CLAY, M. A.,
 Mr. THOS. J. MOORE, *Corresponding Member Z. S.*,
 Mr. ALFRED E. FLETCHER, F. C. S.
 Mr. G. H. MORTON, F. G. S.
 Mr. EDWARD DAVIES, F. C. S.,
 Dr. WHITTLE,
 Mr. RICHARD JOHNSON,
 Mr. JOS. F. ROBINSON.

The names of the Associates were then read over by the Secretary, when they were all declared duly re-elected.

A communication from the Council was next read, recommending the election of Professors Dr. REIHM and Dr. SCHLOTTMAN, of the University of Hallé, as Honorary Members.

The following gentlemen were elected Ordinary Members: Mr. W. B. MACALISTER, and Mr. J. FREDERICK ROGERS.

Mr. T. J. Moore exhibited the following objects from the Free Public Museum:—A collection of fish from the Bay of Yeddo, Japan. Of these fish, specimens of the Angler (*Lophius*), Gurnard, and others, were northern species or genera included in the British fauna, and specimens of the Box fish (*Ostracion*), and others, showed the intermixture of tropical forms. Also a large series of marine specimens dredged in the South China Seas, between 106° and 107° E., and 4° to 6° S., in April last. Among these were particu-

larly pointed out a very handsome red coralline, attached to the rock as it grew; a very large and fine *Alcyonium*, and some rare Sea Urchins. The last named objects had been examined by Mr. Alexander Agassiz, during a recent visit to Liverpool, and were referred by him to the genus *Maretia*. The above formed a part only of a collection made during a voyage to Japan, by Captain Cawne Warren, of the barque *Brilliant*, a newly-elected Associate of the Society, who had preserved and presented careful notes of the latitude and longitude, and other particulars, of the capture of the specimens; and had also kept a meteorological register during his voyage, after the plan recommended by the late Admiral Fitzroy, and had forwarded it to the Board of Trade. Mr. Moore also exhibited two birds, and a vertebra of a large fish, collected in Palestine by Mr. A. M. Sandbach, and presented by him to the Museum. The birds were a specimen of the Common Roller (*Coracias garrula*, Linn.) from the Jordan Valley, between Tiberias and Abu Obeideh, and a Kingfisher (*Alcyon Smyrnensis*, Linn.) from near Bethsaida, both shot during April last. The fish vertebra was picked up by Mr. Sandbach, on the north shore of the Dead Sea, about the same time; had several *Lepralia*-like incrustations, &c., upon it; was much heavier than ordinary recent fish bones, and equalled in size some of the vertebræ from a British specimen of the Maigre (*Sciæna aquila*, 4 ft. 10 in. in length), and to which it bore considerable resemblance.

Mr. J. Macgregor (so widely known for his travels, particularly on the waters of Palestine) was present at the meeting, and stated that no fish of the size indicated by this specimen had come under his observation during his recent explorations in Palestine.

The President then delivered the following Inaugural Address:

INAUGURAL ADDRESS.

GENTLEMEN,—In selecting a subject for the Inaugural Address at the commencement of this Session, I believe that I shall most satisfactorily meet your wishes by giving a short sketch of those features of the Meeting of the British Association in Exeter, which appeared the most interesting or novel; and as the attendance of our Society's Members was very limited, owing to our great distance from Exeter, I trust that a short account of the meeting may not prove entirely a twice-told tale, to all whom I have now the pleasure of addressing, for the first time, from the position of honour in which your kindness has placed me.

With respect to the proceedings generally, my impression is, that, although in some of the sections the papers may have been somewhat less interesting than usual, the meeting will be remembered as having given the first authoritative check to the stream in which philosophical teaching has lately flowed; and that the language of the President, guarded and moderate as it was, will enable minor, but still independent thinkers to maintain with less hesitation, lest they should be thought entirely ignorant of philosophy, their convictions that man is something more than a mechanical machine; and that life, free will and responsibility have an existence and power beyond the mere properties and movements of matter. This, it appears to me, has been the characteristic feature of the recent meeting; and by this general impression, rather than by the special papers read, will the meeting have done its work in promoting the great

cause of truth,—and, if of truth, then of science in its highest and most worthy acceptance.

In the Geographical Section, there was less than the usual interest, from the lack of any important discoveries, and the absence of travellers of either established or of rising reputation; and I believe that the papers generally in the Geological Section also were of limited interest and importance. The only sections in which it could be said that much animation or active interest was excited, were the Biological and the Economic Sections. The room of the first was filled to overflowing, many members being unable to gain entrance even to its porch, on the day which was announced for several papers in opposition to Darwin's views; and also on the following day, when Sir J. Lubbock was to read a paper on the primitive condition of man. In the Economic Section, also, when papers were read on the condition and education of the agricultural labouring class, the room was well filled; and the animation—and perhaps it might almost be said the acrimony—of some parts of the discussion, showed how much more deeply the mind and feelings even of philosophers, and of the British Association, are stirred by what relates to the present and past condition of human kind, to its antecedents and to its future, than by the most abstruse discoveries in what relates only to matter; to what is wanting in that which we must still call *life*, in spite of the teaching of some modern philosophers, however eminent, “that life is only a series of vibrations amongst the particles of matter.”

There was nothing more striking, during the delivery of the President's address, than the wonderful simultaneous start to interest throughout the audience, when he came to the following words, evidently relating to what had been recently said at Norwich and Edinburgh, ushered in by a slight but perceptible change in his voice, and uttered in a

manner that showed a consciousness of their possessing an importance which he did not attribute to some other portions of the address :—

“With reference to those branches of science in which we are more or less concerned with the phenomena of life, my own studies give me no right to address you. But I hope I may be permitted, as a physicist, and viewing the question from the physical side, to express to you my views as to the relation which the physical bears to the biological science.

“In Mechanics, we have long been familiar with the perfect generality of its laws, and of their applicability to bodies organic as well as inorganic, living as well as dead ; so that, in a railway collision, the passengers are thrown forward by virtue of the *vis inertia* of their bodies, precisely according to the laws which regulate the motion of dead matter. So trite has the idea become that reference to it may seem childish. But from Mechanics let us pass on to Chemistry, and the case will be found by no means so clear. When chemists ceased to be content with the mere ultimate analysis of organic substances, and set themselves to study their proximate constituents, a great number of definite chemical compounds were obtained, which could not be formed artificially, and were thought to be essentially connected with life. But, as the science progressed, many of the organic substances were formed artificially ; in some cases from other organic substances, but in other cases actually from their elements ; and we may say that at the present time a considerable number of what used to be regarded as essentially natural organic substances have been formed in the laboratory. That being the case, it seems most reasonable to suppose that in the plant or animal from which these organic substances were obtained they were formed by the play of ordinary chemical affinity.

“But do the laws of chemical affinity, to which, as well as to mechanical laws, living beings are in subjection, account for the *formation* of an organic being, as distinguished from the elaboration of the chemical substances of which it is composed ? No more, it seems to me, than the laws of motion account for the union of oxygen and hydrogen to form water. In the various processes of crystallisation, and so forth, which we witness in dead matter, I cannot see the faintest shadow of an approach to the formation of an organic structure, still less to the wonderful series of changes which are concerned

in the growth and perpetuation of even the lowliest plant. Admitting to the full, as highly probable, though not completely demonstrated, the applicability to living beings of the laws which have been ascertained with reference to dead matter, I feel constrained, at the same time, to admit the existence of a mysterious *something* lying beyond; a something—*sui generis*—which I regard not as balancing or suspending the ordinary physical laws, but as working with them and through them to the attainment of a designed end.

“What this mysterious *something* may be, is a profound mystery. We know not how many links in the chain of secondary causation may yet remain behind. We know not how few. It would be presumptuous indeed to assume in any case that we have already reached the last link, or to charge with irreverence a fellow-worker who attempted to push his investigation yet one step further back. But, on the other hand, if a thick darkness enshrouds all beyond, we have no right to assume that it is impossible we may have reached the last link in the chain—a stage when further progress is unattainable; and we can only refer the highest law at which we stopped to the fiat of an Almighty power. Let us fearlessly trace the dependence of link on link as far as it may be given us to trace it; but let us take heed that in the studying second causes we forget not the First Cause, nor shut our eyes to the wonderful proofs of design which, in the study of organised beings especially, meet us at every turn.”

During many parts of the address, it was easy to observe wandering eyes, and distracted attention; but during the reading of these sentences there was the most absorbed attention; and the subdued applause which followed them implied, as far as we could judge from its character, that the President's remarks had struck a responsive chord in the minds of his hearers; who, however, felt the subject, and the inferences connected with it, too serious for the spontaneous and hearty applause that greets a brilliant experiment, or a sentiment which delights without appealing to the deeper recesses of the heart.

We have just heard the sentiments of one of the greatest masters of mathematical science of the present day; and I wish now to lay before you the expressions of an experi-

mental chemist, whose name, Dumas, needs only to be mentioned, to bring before us the image of one of the most accomplished pioneers in organic chemistry, and one who has a right to speak on behalf of chemists, which the President of the British Association had declared his own inability to do.

In delivering the "Faraday Lecture," in the Royal Institution, in London, last June, Dumas says (*Chemical News*, July 2, 1869), "The chemist is no longer obliged to derive all so-called organic substances from those yielded by animals and vegetables; he creates them now at will, and by the necessary artifices succeeds in forming all the definite compounds of organic chemistry. But, if I ask the physiologist on the subject of these innumerable compounds, misnamed 'organic,' which the chemist transfers or reproduces at his pleasure, 'Are these compounds living?' he will reply 'No!' 'Have they lived, or are they capable of living?' 'No!' And if I ask the chemist himself, if these compounds belong to the chemistry of inanimate ("brut") substances, he will reply, 'Yes!' Sugar and alcohol, and other organic products, have no more share in life than bone-earth, or the salts contained in the various liquids. Chemistry may, indeed, produce them, in the same sense in which she manufactures sulphuric acid or soda, without, for all that, having penetrated into the sanctuary of life. This subject remains where it was, inaccessible, closed. Life is still the continuation of life. Its origin is hidden from us as well as its end. We have never witnessed the beginning of life, we have never seen how it terminates; and the chemist has never manufactured anything which, near or distant, was susceptible even of the appearance of life. Everything he has made in his laboratory belongs to inanimate matter. As soon as he approaches life and organization he is powerless."

When, therefore, we are told, as we were at Norwich, that "if we place corn in the earth, and subject it to a certain degree of warmth (in other words, to tremulous molecular motion), the grain and the substances surrounding it interact, and a bud is formed, which reaches the surface, where it is exposed to the sun's rays, which are also to be regarded as a kind of vibratory motion, and then we have in succession the stalk and the full corn in the ear; and, given the grain and its environments, an intellect sufficiently expanded might trace out, *a priori*, every step of the process, and by the application of *mechanical* principles would be able to demonstrate that the cycle of actions must end in the reproduction of forms like that with which the operation began." When, I say, we are told this, the chemist replies, that chemical forces alone have never been able to produce even the semblance of life; and the great mathematician and physicist who now fills the presidential chair of the British Association, tells us "that, in addition to all those laws which apply to dead matter, he is constrained to admit the existence of a mysterious something—*sui generis*—lying beyond; not suspending the ordinary physical laws, but working through them, to produce the wonderful series of changes which are concerned in the growth and perpetuation of even the lowest of living beings." This mysterious something—*sui generis*—it is which, when associated with the protoplasm in the spermatic secretion of man, or the human ovum, causes that it shall differ so utterly in its powers from protoplasm from every other known source, that it shall assimilate all other forms of protoplasm, and slowly convert them into a thinking, responsible being, whose visible personality shall last about seventy years; whilst this mysterious something—still *sui generis*—when associated with other protoplasm, shall cause it to produce an irresponsible winged creature, which lasts for a day.

When associated with the protoplasm of the rock rose, it shall cause it to bud in a night, and blossom for a single day; whilst, associated with that of the oak, it shall cause it to increase for centuries, and yet terminate its individual existence at last, with as much certainty as that of the shorter lived beings whom we have passed in review. This same something, *sui generis* also, if associated with the corn, will enable the various molecular vibrations (warmth and light, and chemical affinity), which are dwelt upon by Professor Tyndall, to produce the changes that are observed in the growth of the grain; whilst, without its presence, the stoutest advocate of molecular vibration is as well aware as the most old-fashioned naturalist, that heat and moisture, light and electricity, and every other known modification of force, might act singly or combined for ever, without our seeing either the sprout, the blade, or the full corn in the ear. It is no answer to these proofs of a force which manifests its power at least as strikingly and as characteristically as light, or electricity, or any other mode of molecular vibration, to say that the protoplasm of grass can be converted into that of a sheep, and that again into the protoplasm of a man, and that again into the protoplasm of a worm; and therefore our thoughts and faculties—all that makes us man—are merely the result of the molecular forces of our protoplasm. (See Huxley on "Protoplasm," *Fortnightly Review*, p. 140. 1869.)

Most true it is that these conversions do take place daily, before our eyes; but this, which is a fact, does not render it less a fact, for which the philosopher must give account, that the original protoplasm of the man, if associated with this force—*sui generis*,—will render everything subordinate to the production of a thinking, intelligent being; and the original protoplasm of the worm, similarly associated, will render everything subordinate to the production of an un-

thinking creature which grovels in the earth; whilst the protoplasm of either, if unassociated with this peculiar force, will produce neither a thinking nor an unthinking animal, but will be resolved, by the molecular forces of heat, chemical affinity, and the like, into the lifeless compounds of the merely mechanical world about it.

When mechanical forces and molecular vibrations can be shown capable of producing a machine which shall go out of its way to supply itself with the materials for its own growth; which shall repair its own injuries sustained by accident or by wear and tear; and which in declining years shall produce an offspring as unlike itself as the ovum to the mature man, but which shall gradually, and with certainty, develope, *ab intra*, first one structure and then another, until it becomes a counterpart of its parent machine; then, and not till then, will the advocates of purely molecular and mechanical forces have rendered it probable, that that force called life is merely a series of mechanical molecular vibrations, and not a something so perfectly *sui generis*, that no known forces, either singly or combined, can produce the results which vitality daily presents before our eyes.*

* The circumstances which characterise the so-called "Vital Force" as being "*sui generis*," and unlike any other known forces, either single or combined, are the following, amongst others.—

1. Its power of appropriating chemical substances, sometimes elementary, but often compounds of a binary nature, and converting them into highly complex compounds, which constitute either a structure, known as an organised body, or else the contents of such a body. (*Vulgo*, it assimilates, or digests.)

2. In the process of growth of a so-called living body, the original structure enlarges by interstitial appropriation of these altered chemical compounds, and not by simple additions to the exterior, as in the case of crystals or amorphous accretions. (It is nourished and grows.)

3. In the process of living growth, the general mass enlarges by changes which take place in the original organised structure, and result either in the production of multiplied repetitions of the so-called parent structure (cell or otherwise), or in the production of various structures (fibres, tubes, vessels, etc.), having no representative in the original structure; (*i. e.*, various organs are produced *de novo*, *e. g.* leaves, flowers, limbs, viscera, respiratory or circulating systems, etc.)

It has, however, I confess, always appeared to me that many extreme advocates, and also the extreme opponents, of the theory that life is merely a form of molecular motion, both advocate and oppose it, whether consciously or not, in no small degree because of the supposed moral consequences which would result from it; such as the mechanical, and therefore irresponsible, nature of our actions, and many other consequences which need not be pointed out. And it is the unacknowledged, rather than the ostensible features of the controversy, which impart their edge and bitterness to discussions upon the subject. Our province,

4. In the further process of vital growth, new structures are produced, which in many cases differ widely from the original, and produce a resulting mass which is not a mere repetition of previously existing parts. But, although differing *toto calo* from any thing preceding it, this mass reproduces an organised structure, similar in character to the original from which it was itself developed, and possessing similar powers of development. (It produces an offspring.)

5. The original structure, when removed, or impaired by gradual wear and tear, or by injury, is replaced by a new structure, either similar to the original, or still characterised by those features recognised as constituting an organised structure. (Wear and tear is restored, and wounds are healed.)

6. The so-called vital force has a definite duration; so that, whilst its normal period is days in some cases, it is years in others, and ages in yet others. It is capable of being brought to a close by many forces acting upon it, so that the manifestations commonly known as "life" cease; and it is also capable of being prolonged within certain narrow limits by other forces or agencies; but no known agencies are capable of prolonging its duration indefinitely, and its manifestations come to an end from failure of the power itself, not from failure of the materials which have been previously associated with its exhibition. So that, whilst, *e.g.*, heat or electricity can be continued indefinitely by the supply of sufficient materials, the so-called vital force terminates without the failure of the materials constituting or previously maintaining the living structure. (Some things live a day, some a year, and some a century. Though you may kill them prematurely, you cannot make a daisy live as long as an oak, or a fly as long as an elephant.)

7. In a vast proportion of cases, the "vital force" is associated with, and appears to be the cause of voluntary motion, and mental and moral manifestations. They have never been produced or maintained by any known forces in the absence of this which is in this respect eminently "*sui generis*." The considerations connected with this subject are too extensive for the limits of a note; but, as facts and phenomena are the special field for the philosopher, it is incumbent upon the advocates of the theory that all our vital phenomena are merely the result of molecular or mechanical forces, to say why they attach the idea of moral blame to the man who kindles the martyr's pyre, whilst they regard the fire which consumes him as irresponsible, if both are alike merely the result of material forces?

however, as students of nature, and seekers after truth, is to search patiently and warily amongst the hidden things of nature; and, as they are gradually revealed, to remember that we can often at first discern but half a truth, which, whilst thus imperfectly seen, may seem to us, or to others, to be error rather than truth. But, if we persevere with an honest heart, the whole truth will at last be made known to us; and, during the search, we must always bear with us the grace of a candid spirit, which shall neither despise those who are behind us, nor distrust those who are before us or who travel on a different path from ourselves, whilst engaged in the common object of us all, the search after truth, and the desire for that reward which awaits all who ultimately attain to it.

But I must now proceed to the Sections themselves, and endeavour as far as possible to reproduce their spirit, as well as their subjects.

In the Biological Section three papers were announced to be read, in opposition to Darwinism; and it was noteworthy to observe the undisguised contempt with which the President of the Section spoke of these papers, even before they were read. Can any brains or knowledge be expected from a man who will read a paper against Darwin? That Darwinism should be thought really assailable, seemed (if one might judge from his tone and manner) to be not less absurd, in his eyes, than squaring the circle, or the attempt to discover perpetual motion, or the *elixir vite*. But another circumstance struck me as remarkable; and that was the great care with which, in his remarks from the chair, Professor Busk limited the range of what was to be considered Darwinism. His presidential utterances were scarcely less contemptuous than Huxley's, for those who had written against a theory of which, said he, they showed

themselves profoundly ignorant, viz., "Darwinism. Development with Modification." This alone, according to the President of the Section, was the theory of Darwin; and care was taken, not by him alone, but by others, to make it appear that the extreme transmutation of species, which Darwin himself acknowledges to follow logically from his premises, was no part of his theory; and that all the features of it which have given most—shall I say offence?—had really nothing to do with it. In short, they appeared to me to draw the fangs out of his own book on the *Origin of Species*, and then to scorn the man who should say that his theory was either erroneous or an unfounded assumption.

It must be admitted that the three papers were not of a calibre which entitled them to high respect; and, although they were nominally in opposition to Darwinism, one of them had little bearing upon the subject; the second was feeble; and the third, which excited by far the most interest, was scarcely against Darwinism at all, but was in reality as vigorous an onslaught upon Huxley, and to some extent upon Hooker also, as the author, Dr. McCann, was capable of making. It was, to a great extent, a metaphysical paper, and some of the objections were weighty; but the passage in his paper which told upon the meeting with the greatest, indeed with startling effect, was the following extract from Huxley's lecture on Protoplasm, delivered in Edinburgh last November:—"I can discover no logical halting place," says Huxley, "between the admission that the dull vital actions of a fungus, or the foraminifera, are the properties of their protoplasm, and the direct results of the nature of the matter of which they are composed, and the further concession that all vital actions may with equal propriety be said to be the result of the molecular forces of the protoplasm which displays it. And, if so, it must be true that the thoughts to which I am now giving utterance are the expres-

sion of molecular changes in that matter of life (the protoplasm), which is the source of our other vital phenomena. Most undoubtedly the terms of the proposition are distinctly materialistic ; and, when I undertook to deliver the present discourse, I purposed to lead you through the territory of vital phenomena, to the materialistic slough in which you find yourselves now plunged, and then to point out to you the sole path by which, in my judgment, extrication is possible." After speaking of those persons who attach importance to what is beyond the scope of our senses, of our powers of observation, or of experiment,—by which he appears to allude to those who occupy their thoughts with so-called spiritual subjects and contemplations of the future, for he compares them to people speculating upon the affairs of the inhabitants of the moon,—Huxley goes on to say, "Why trouble ourselves about matters of which, however important they may be, we do know nothing, and can know nothing? *We live in a world which is full of misery and ignorance, and the plain duty of each of us is to try and make the little corner he can influence somewhat less miserable, and somewhat less ignorant, than it was before he entered it.*"

"Most true and lamentable," said the reader of the paper, "is the misery and the wretchedness of the world, and dark is the ignorance of many of the corners of it. And what is now the sovereign remedy which is to relieve this misery, and dispel this ignorance? Let me answer in Professor Huxley's own words, which immediately follow—'To do this effectually, it is necessary to be fully possessed of only two beliefs; the first that the order of nature is ascertainable by our faculties, and the second that our volition counts for something as a condition in the course of events.' You are overwhelmed with misery—continued the reader—do you want relief? 'Believe that the order of nature

is ascertainable by our faculties.' Do you want to be freed from your ignorance and wickedness? 'Believe that our volition counts for something as a condition in the course of events.'"

It would be difficult to describe the effect produced upon the audience by these extracts from Huxley's lecture; and it would require a much greater master of elocution than myself to reproduce, even feebly, the measured and bitter scorn with which Huxley replied to this attack. He could not deny the truth of the extracts. He scarcely attempted to justify or palliate them. He gave no answer to many of the objections urged against his positions by Dr. McCann, but he made a personal and *tu quoque* rejoinder, which, for bitterness, scorn, and telling power, has seldom, I believe, been heard in the British Association.*

The paper by Sir John Lubbock, on the primitive condition of man, the following day, gave rise to one of the best discussions of the meeting. It is probable that the advocates of the respective views, that man was originally debased, but has gradually risen; and, on the other hand, that he has fallen from an original high state into the present degradation in which he may now be found; would leave the discussion, strengthened in their previous views by the arguments there advanced; and if I express the opinion that far more weighty proofs of declension from a high state, than of elevation from a low one, were adduced, it is perhaps because these arguments fell in with my own belief; and thus "the wish was father to the thought." But on one point, at any rate, nearly every speaker was

* It is due to Professor Huxley to observe that the attack upon himself was made without notice in the title of Dr. McCann's paper, and that the author of that paper had failed to acquaint Huxley that he should make any personal allusion to him. Both the Professor and the audience were therefore taken by surprise at this onslaught, in a paper nominally against Darwin's theory; which may account for some of the bitterness and other features of Huxley's reply.

agreed, and that was, that moral elevation bore no relation whatever, unless it might be an inverse relation, to the position attained in intellect, cultivation, arts, or luxury, by the people under review. The speakers also were neither few nor wanting in knowledge of the subject, who bore witness to the general high moral characteristics of so-called savage or barbarous nations, in every part of the present known world. Manslaughter of an enemy, and theft, as in the shape of cattle lifting, were the principal departures from a high code of moral virtues amongst nearly every uncivilised people mentioned. And it may be well for many a civilised nation to pause before, on these two counts, it assumes to pass a verdict of guilty, as if it sat upon the judgment-seat with clean hands itself.

There was another point, also, upon which there was a general agreement: namely, that, so far as our knowledge extends, every nation that has risen to a higher state has attributed its advance to some teaching *ab extra*, not to its own unaided powers of progress. Sometimes it has claimed a God as its teacher, and at other times some prophet (by whatever name he may be designated) who has been taught by God: but it has never claimed to have made its advances without this assistance from above. The old Roman myth of the conferences of Numa with his celestial spouse, who taught him the laws and constitution which were established in the early history of that people; the Greek belief in the descent of the Gods, and the influences they imparted through the oracles and other channels; the prophetic character of Confucius and of Buddha; the Hebrew belief in the long line of prophets, which, commencing with Moses, terminated in the One far higher than Moses, in whom the Christian world believes,—these are all but illustrations of the belief which the speakers reported from all the peoples they were acquainted with, that the nations

which have risen have been taught from above, and have not advanced from any inherent principle in humanity, tending naturally to rise from ignorance to knowledge, from vice to the pursuit of virtue.

The Antiquity of Man upon the Earth was incidentally alluded to during the discussion; and some remarkable circumstances have recently come to light during the exploration of Kent's Cavern, Torquay, which will not be out of place here, though they were barely touched upon in this Section, but were mentioned in the Report to the Geological Section, by Mr. Pengelly.

This cavern is of considerable extent, and stretches out in various directions, and has yielded an almost incredible number of fossils and flint instruments; the amount being above fifty thousand at the end of last year, which were contained in nearly four thousand separate boxes. We are, however, now chiefly concerned with that part of the cave which is first entered, and with one remote part which was only explored last year.

The floor of the cave is stalagmite, which averages about a foot in thickness; varying from a thin crust at the edges, to nearly two feet thick in some parts. Beneath this lies a bed of what is called cave earth, or (from its colour) "the black band," which is seldom more than a few inches thick. Beneath this again, in many parts, is a bed of very old crystalline stalagmite, many feet in thickness; and beneath this is breccia, of undetermined thickness.

About ten yards from the mouth of the cave, where the stalagmite of the floor is about a foot thick, and the roof of the cavern is comparatively lofty, a bed of the cave earth has been discovered, to which the remarks on the antiquity of man will chiefly refer. This bed is of limited extent, being about ten feet square; which would make the floor of a very moderate sized room, though a very good sized

gipsy tent. Upon this earth, before the stalagmite was deposited, it is supposed that some primeval Britons had their dwelling. It is so near the cave mouth, that it is easy to read without artificial light; and a bright fire of faggots being kindled in its centre, the explorers of the cavern sat round it without inconvenience, either from the flames or the smoke. It was, therefore, adapted for human habitation; and the reason for thinking that it had been so inhabited is that, where the stalagmite has been removed, this bed of earth was found to contain many pieces of charcoal, and partially burnt bones, besides numerous bones and teeth of recent and extinct animals. Above three hundred (366) flint and other implements, and—a most remarkable proof of human habitation and human civilization—a bone needle, two and a half inches long, and pierced with an eye at one end one-eighth of an inch in diameter, capable of admitting moderately fine twine.

This needle it will be observed was found in the cave earth, beneath a bed of stalagmite nearly a foot thick; and when first discovered, it was not known to be a needle at all, nor was it supposed to be of artificial origin: for when found it was entirely encrusted with a coat of lime, so as to resemble a slender stalactite; and as such it had been placed in box No. 1847, and labelled “obtained from the cave earth below the stalagmite,”—in such and such a portion of it. Whilst lying in this box the calcareous covering had dried, and it broke off on removing it from the box on the 24th September, last year (1868), and disclosed this unexpected and remarkable specimen of human workmanship. In the same situation also *i.e.*, beneath the stalagmite, and about the same time, was discovered a bone fish spear or harpoon, which was barbed on one side only; and, like the needle, was so encrusted, as to have been placed, also as a stalactite, in another box, No. 2,206. When now we begin to speculate upon the date of

these instruments, of the artificial nature of which there cannot be a shadow of doubt, we are carried back to a period so remote as to set dates at defiance. It is true that the grounds upon which to give a judgment are of doubtful value; but still they point irresistibly to something of extreme antiquity. The part of the cave in which they were found is little subject to drippings from the roof, and therefore the formation of twelve inches of stalagmite with which they were covered must have required a long period. And if it should be thought that the drippings may be very rich in dissolved lime, we are met by a practical answer from another part of the cave, which sets this supposition aside. These caves have long been known; and, with the adventurous spirit of the true Briton, Robert Hedges visited the caves in 1688; and, with the characteristic modesty of his nation, carved his name on the surface of the stalagmite about one-third of an inch deep—"Robert Hedges, February 20, 1688." Now the part of the cave in which this inscription appears is exposed to a constant dropping from the roof, and yet the inscription is barely shallower, so far as can be judged, than when first cut. There are many others also: one of the date of 1615, to which the same remark will apply. If then, in two centuries and a-half, since 1615, there has been scarcely an appreciable deposit of stalagmite in a wet dripping part of the cave, how long will have been necessary for forming a foot of stalagmite in a dry part of it? For it is found throughout the caverns, that the thickness of the stalagmite corresponds very fairly in the different parts of the cave, with its present condition as to the drop.

But if this needle and harpoon carry us back to a date far beyond what we can master, a still more recent discovery extends the date to a still more remote period, which is, indeed, almost beyond conjecture. Whilst excavating on the 5th of March, of the present year, 1869, a flint flake was found

in the rock beneath the lower bed of stalagmite, which was in that place many feet in thickness. And of its artificial formation, those who are best qualified to judge entertain no doubt.

Mr. John Evans, F.R.S., says of it, "It is undoubtedly of human workmanship, . . . and it has taken five or six blows, each administered with a purpose in view, to produce this instrument. . . . And not only has it been artificially made, but it carries upon it evidences of having been in use as a tool, for the edge is worn away along its entire length, and exhibits the slightly jagged appearance, such as I find by experience to result from scraping bone, or other hard substances, with the edge of a flint flake."—(*Pengelly's Report*, pp. 15, 16.)

To yourselves I must leave the inferences to be drawn from these remarkable discoveries; and conclude this address, which I fear has already overtaxed your patience, with a slight allusion, involving no derangement of old beliefs, to an interesting paper by Professor Jacobi, in the Chemical Section. It has been long known that copper, silver, and some other metals, could be deposited upon other metals by means of the galvanic current; but hitherto chemists have not been able to separate iron from its salts, and deposit it by the process of electrotyping. Professor Jacobi, however, has discovered that by mixing magnesian sulphate with ferric sulphate, he can plate with iron as well as hitherto with other metals; and he exhibited several specimens of iron plating of great beauty. A circumstance of great interest was mentioned by him in connection with this newly-deposited iron, viz., that like palladium, it is capable of condensing hydrogen, and forming a solid alloy. It absorbs about twenty times its volume of this gas, which so far alters its own dimensions, that if one surface only of an iron plate be exposed to the gas, it expands, becoming convex, and rendering the previously flat plate partially curled up.

Whilst mentioning this circumstance, it will not be out of place to associate it with the name of Professor Graham, who has been removed from amongst us almost before this addition to his own discoveries in hydrogen absorption could have reached his ears. Of him, I will only say, that truthfulness and perseverance were the characteristics of his life; and "constancy to the end" will be the memorial he will have left behind him, that we may learn to follow in his steps.

FIRST ORDINARY MEETING.

ROYAL INSTITUTION, 18th October, 1869.

JOHN BIRKBECK NEVINS, M.D., PRESIDENT, in the
Chair.

Ladies had been invited to the Meeting, and the attendance of Members and their friends was unusually large.

Messrs. J. Campbell Brown, B.Sc., F.R.C.S., Henry James Cook, and William Bolton Jones were unanimously elected Ordinary Members. Professors Dr. Riehm and Dr. Schlottman, of the University of Hallé, were elected Honorary Members.

Mr. Baruchson exhibited an interesting series of maps, illustrative of the progress and present condition of education in France.

Messrs. Picton, Higgins, and Marples made some remarks upon the observations they had made upon the webs of the gossamer spider, during the late extraordinary appearances of these insects in the neighbourhood of Liverpool.

The Paper for the evening was read by Mr. William Morrison, M.P., "On the Origin of the Palestine Exploration Fund," and was illustrated by an extensive series of maps, diagrams, and antiquities, together with models of Ancient Jerusalem and the Church of the Holy Sepulchre.

Previous to the Ordinary Business of the evening, an Extraordinary Meeting of the Society was held, to confirm

the vote of £50 (to the local fund of the British Association) proposed and carried at the Annual Meeting. The vote was unanimously agreed to.

SECOND ORDINARY MEETING.

ROYAL INSTITUTION, 1st November, 1869.

ALFRED HIGGINSON, M.R.C.S., VICE-PRESIDENT, in the Chair.

Messrs. W. Kinsman and C. H. Cook were unanimously elected ordinary Members.

The President read a paper "On some Recent Discoveries in Astronomy and Optics," which was illustrated with numerous diagrams.

THIRD ORDINARY MEETING.

ROYAL INSTITUTION, 15th November, 1869.

JOHN BIRKBECK NEVINS, M.D., PRESIDENT, in the Chair.

Messrs. Joseph King, W. K. Kent, B. De Beer, A. Morgan, and E. H. L. Hartwig were unanimously elected Ordinary Members.

Mr. T. J. Moore exhibited the following objects:—A fine skull of the Babirusa, and the skull of a rare species of Crocodile (*Mecistops cataphractus*), probably from West Africa, and remarkable for the long and slender form of the jaws; (these objects were recently bequeathed

to the Free Museum by the late Mr. Arthur Berry;) two fine specimens of Cray-fish (*Callianassa*), from Old Calabar, presented by Dr. W. C. Thompson; also some interesting marine specimens, collected and presented by Captain Mortimer, the first Associate of the Society. Among them was a well-preserved *Physalia*, or Portuguese man-of-war, retaining in its dry state much of the brilliant colouring seen in the living creature; also a dried series, about eighteen inches long, of *Chain Salpæ*; together with specimens of various objects in spirit, particularly of a minute crustacean, or shrimp-like creature (*Sapphirina*?), met with in great numbers, and possessing the remarkable property of reflecting iridescent light from beneath the water. These objects had been collected by Captain Mortimer in the North Atlantic, who related to the meeting several interesting particulars respecting their capture and appearance in life. The President expressed the thanks of the Society to Captain Mortimer for these communications.

Mr. A. J. Mott, Honorary Treasurer, also exhibited a large sectional map of Africa, on which he had traced the latest discoveries of Dr. Livingstone. He accompanied this with a detailed account of the doctor's journey, and pointed out the probable locality where he was now pursuing his researches.

The following paper was then read by Mr. Fletcher:

DESCRIPTION OF AN ANEMOMETER CAPABLE
OF MEASURING THE SPEED OF AIR IN HEATED
FLUES, OR PLACES WHERE CORROSIVE
VAPOURS ARE FOUND.

BY ALFRED E. FLETCHER, F.C.S.

THREE years ago, I had the honour of describing to the Society some instruments and apparatus which had been contrived for measuring the amount of air passing in a given time along flues and air passages, and for examining its quality, in order to carry out the provisions of the Alkali Act of 1863, which enacts that every alkali work shall condense 95 per cent. of the muriatic acid there generated.

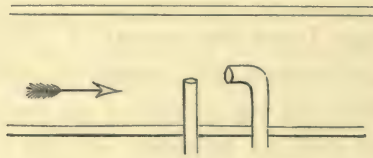
Among these was an anemometer, constructed on a new principle. I purpose bringing it before the Society this evening to discuss its action mathematically, also to give the result of experiments which corroborate the theoretic calculations.

It is constructed without wheelwork, and with no moving parts exposed to the current of air to be measured. This was a necessary condition of the instrument, as often the air might contain corrosive vapours, soot, and dust; all these would interfere with the action of delicate mechanism.

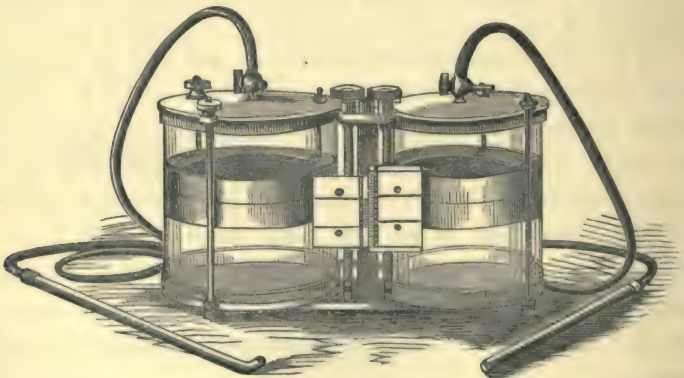
The instrument is on the table, together with a few anemometers of mechanical construction. It will be readily seen that these would not survive an introduction to a red-hot flue conveying flame, acid vapour, etc. from a chemical furnace.

I have called mine an Ether Anemometer, as the indica-

tions are made by means of a moving column of ether. The instrument consists, firstly, of two brass tubes of about $\frac{3}{16}$ ths inch internal diameter, open throughout, and of any length; secondly, of a manometer. The end of one tube is straight and plain; the end of the other is bent to a right angle. When in use, these tubes are placed parallel to each other, and so that their ends are exposed to the current of air to be measured. They lie at right angles to the current, which thus crosses the open end of the one, and blows into the bent end of the other.



By this means, a partial vacuum is established in the straight tube; and a differential manometer, attached to the outer ends of the tubes, will show the excess of pressure in the bent one, over that in the straight one. The manometer used is essentially a U tube, whose vertical limbs are cylinders, of one or more inches diameter. The fluid used is



ether, and the level is read off by the use of an ivory scale

and vernier. These, by means of adjusting screws, are brought to coincide with lines on the floats, which rise and fall with the columns of ether in the instrument.

The difference of level of the columns may be read off to $\frac{1}{1000}$ inch. This difference of level may be taken as a measure of the speed of the air passing the ends of the tubes, if we can find out the law which governs it.

Before establishing the law by mathematical deduction, I attempted by experiment to find the connection between the speed of the air and the reading of the manometer, and empirically to construct a table of them. This I described on a former occasion; but, as since then these experiments have been repeated with some modification, it may be well to give a brief account of them now.

The object in view was, first, to obtain a current of air of known velocity, then to expose my anemometer to its influence, and read off the speed indicated.

Many difficulties were met with in trying to get this regulated current of air; these I need not now detail. The following method was adopted.

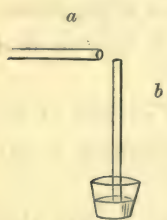
A straight flue, or air channel, in connection with a high chimney, was obtained; the length of those used in the different experiments varied from 50 to 100 feet, and in sectional area, from 2 to 6 square feet. At the end of the flue, next the chimney, a slide, or damper, regulated the flow of air. Near it were fixed two panes of glass, in the walls of the flue, opposite to one another, so that an observer could see through the column of moving air. The end furthest from the chimney was open. There, from time to time, at a given signal, a few grains of gunpowder were ignited, and soon the smoke, travelling with the air in the flue, was seen to pass the panes of glass. The time occupied by the smoke in travelling the length of the flue could thus be accurately noted, and the rate calculated. It will

afterwards be seen that the result of these experiments comes very close to that obtained by purely mathematical reasoning.

The mathematical problem to be solved may be briefly stated thus :--

The lower end of a vertical tube, open at both ends, dips into a liquid. To what height will the liquid be raised in the tube by the action of a current of air passing with a given velocity across its upper end ?

It will be seen that such an action takes place when I blow through tube *a*, which directs a current of air across the open end of *b*. The lower end of *b* dips into water. It is difficult to explain the exact nature of the action which takes place. Perhaps the particles of air moving horizontally drag forward the particles at the end of the vertical column. These are replaced by others, to be dragged away in their turn, and thus a partial vacuum is set up in the vertical tube. Be this supposition correct or not, we may, however, be sure that some air flows out of the vertical tube, and is carried away by the horizontal current. If the force of the horizontal current is thus expended in propelling this air, the action may be considered as one of impact. Now the force of impact of a moving column of air can be calculated.



Let v = velocity of the air in feet per second.

g = gravity = 32.18 feet per second.

w = weight of a cubic foot of air at 60° F. and 29.92 inches barometric pressure = 0.076107 lbs.

P = pressure in lbs. per square foot of a flat surface held at right angles to the direction of the current of air.

Then $v^2 w = gP$.

Let p = the height of the column of liquid driven up the tube, measured in inches.

W = weight in lbs. of $\frac{1}{12}$ cubic foot of this liquid.

Then $P = pW$; $v^2 w = gpW$; $v = \sqrt{p \frac{gW}{w}}$. Where the liquid

used is water, $W = 5.20833$, and $v = \sqrt{p} \cdot 46.92$, or $p = \frac{v^2}{2202}$.

That is, if I have raised water in the vertical tube 12 inches, by forcing a jet of air across the top of it, that jet of air was moving at the rate of 162.6 feet per second.

In the anemometer before you, ether of the specific gravity 0.740 is employed, and the instrument is so used that the reading is double the actual column of ether supported.

In this case $v = \sqrt{\frac{p}{2} \frac{gW}{w}} = \sqrt{p} \cdot 28.55$.

In order now to see what correction will be necessary when the temperature of the stream of air is different from that of 60° Fahr.,

Let v^1 = velocity of air at some other temperature, say at the temperature of t degrees Fahr.

w^1 = weight of a cubic foot of air at that temperature.

vol^1 = volume of a cubic foot of air at that temperature.

$$\text{Then } \frac{v}{v^1} = \frac{vol.^1}{vol.} = \frac{vol. \text{ at } 32^\circ \left(1 + \frac{t-32}{491}\right)}{vol. \text{ at } 32^\circ \left(1 + \frac{60-32}{491}\right)} = \frac{459+t}{519}.$$

$$\text{Or } \frac{1}{w^1} = \frac{1}{w} \cdot \frac{459+t}{519}.$$

$$\begin{aligned} \text{But } v &= \sqrt{\frac{p}{2} \frac{gW}{w}} \text{ or } v^1 = \sqrt{\frac{p}{2} \frac{gW}{w^1}} = \sqrt{\frac{gpW}{2} \frac{1}{w} \frac{459+t}{519}} \\ &= \sqrt{p \frac{459+t}{519}} \times 28.55. \end{aligned}$$

But it is generally necessary to carry the correction a step further, and to give the velocity in feet of air at 60° temperature.

$$\begin{aligned}
 \text{Now } v &= v^1 \frac{\text{vol.}}{\text{vol.}^1} = v^1 \frac{519}{459+t} \\
 &= \sqrt{p \frac{459+t}{519}} \times 28.55 \times \frac{519}{459+t} \\
 &= \sqrt{p \frac{519}{459+t}} \times 28.55.
 \end{aligned}$$

Further, to correct for variations in barometric pressure,

Let v'' = velocity of air at some other pressure than

29.92 inches, say at a pressure of h inches.

w'' = weight of a cubic foot of air at that pressure.

$\text{vol.}''$ = volume of the same.

$$\text{Then } \frac{w}{w''} = \frac{29.92}{h}; \text{ or } \frac{1}{w''} = \frac{1}{w} \frac{29.92}{h}.$$

$$\begin{aligned}
 \text{As above, } v'' &= \sqrt{\frac{p}{2} \frac{gW}{w''}} = \sqrt{\frac{h}{2} \frac{gW}{w} \frac{29.92}{h}} \\
 &= \sqrt{p \frac{29.92}{h}} \cdot 28.55.
 \end{aligned}$$

In cases where it is necessary to give the velocity in feet of air at a pressure 29.92 inches :

$$\frac{v}{v''} = \frac{h}{29.92} \quad v = v'' \frac{h}{29.92} = \sqrt{p \frac{h}{29.92}} \times 28.55.$$

The complete formula, embodying the formula of correction for variations of temperature, and also of barometric pressure, would therefore be—

$$v = \sqrt{p \frac{h}{29.92} \cdot \frac{519}{459+t}} \times 28.55.$$

v being the velocity of air at a temperature of t degrees Fahr., under a pressure of h inches of mercury; but the velocity is measured in feet per second of air at the normal temperature and pressure. When drawing a sample of air from a chimney, in order to examine it, that sample is measured by the aspirator employed, under the existing

barometric pressure; we want, therefore, the velocity to be given in feet of air, under the same condition. The following is the formula then to be used:

$$v = \sqrt{p \frac{29.92}{h} \cdot \frac{519}{459 + t}} + 28.55.$$

In these expressions, the number 28.55 is the constant multiplier deduced. It remains to be seen what number will be deduced from the experiments before described.

Expressing v in terms of the other factors, we have

$$c = \sqrt{\frac{v^2}{p} \cdot \frac{29.92}{h} \cdot \frac{459 + t}{519}}.$$

Below is a schedule of the experiments, the values of c being calculated from each, and an average taken.

No. of Experiment.	Distance. Feet.	Time occupied by Smoke. Seconds.	Speed of Smoke. Feet per Second.	Pressure shown by Anemometer. Inches.	Temperature of Air in the Flue. Deg. Fahr.	Barometer pressure. Inches.	Value of c .
1	55	9	6.111	0.045	54	30.10	28.56
2	117	12.3	9.513	0.1055	50	30.10	28.92
3	94	13.5	6.963	0.0575	55	29.65	29.02
4	94	16.5	5.757	0.038	55	29.65	29.21
5	145	8	18.12	0.4195	44	30.30	27.38
6	145	16	9.06	0.101	44	30.30	27.90
Average							28.50

These experiments were made in three separate flues, and many experiments were made in each. The above are the average of the results.

The average value of c in the experiments is 28.50, while the value arrived at by purely mathematical considerations is 28.55. This close correspondence is the more satisfactory when the difficulty of accurately measuring short intervals of time is borne in mind.

I have, therefore, adopted the formula $v = \sqrt{p} \times 28.55$, as correct, and calculated from it a table, showing the velocities which correspond to the various readings of the anemometer. The table is annexed; also a table showing the correction to be made for variations in the temperature of the air whose speed is to be measured. The corrections to be made for small variations of barometric pressure are unimportant. When it is necessary to make the correction, recourse must be had to the formula.

$$v'' = \sqrt{p \frac{29.92}{h}} \times 28.55, \text{ or } v = \sqrt{p \frac{h}{29.92}} \times 28.55,$$

according to the circumstances of the case. In the former, the velocity is given in feet per second of air measured under the barometric pressure existing in the air channel; in the latter, it is given in feet per second of air measured under a pressure of 29.92 inches of mercury.

It may be asked if allowance should be made for the expansion or contraction which will take place in the ether of the manometer when exposed to varying temperatures. The variations of temperature to which the manometer itself is exposed are not great, being those of the external atmosphere only. It may be said that for a variation of 10 degrees the error introduced will be about one per cent. Thus, if the manometer has been exposed to a temperature of 50° , and the speed of the air experimented on has been calculated at 10 feet per second, the real speed will be 10.1 feet. If the temperature of the ether in the manometer was 70° , then the real speed, in place of 10 feet, will be 9.9 feet per second.

In order to test by experiment the correctness of the formula for making allowance for variations in the temperature of the air whose velocity is to be measured, the following trial was made. In a furnace constructed for an experimental purpose, a current of air entered through a pipe 9 inches diameter at a temperature of 170° ; after traversing

channels of red-hot brick work, it passed out through a 6-inch pipe at a temperature of 560° .

The reading of the anemometer at the inlet flue was 0.012 inch. Referring to the table, the speed given is 3.127 feet per second. The correcting figure for the temperature 170° is 0.9083. Multiplying the two together, we have 2.84 feet per second as the speed of the air measured at 60° . The quantity of air passing was, therefore, 1.255 cubic feet per second.

At the outlet pipe, the anemometer reading was 0.102 inch, showing by the table a speed of 9.118 feet per second, to be multiplied by 0.7137, the figure of correction for the temperature 560° . This gives 6.508 feet per second for the speed of air measured at 60° ; therefore the quantity of air passing was 1.278 cubic feet per second. The error is less than two per cent. Such an approximation is perhaps as close as could be expected in measurements of this kind, and may, it is thought, be taken as a confirmation of the general correctness of the formulæ.

TABLE I.

TABLE to show the SPEED of CURRENTS of AIR as indicated
by the ETHER ANEMOMETER.

$$v = \sqrt{p \times 28.55}.$$

Temperature 60° Fahr.

Barometer 29.92 inches.

Manometer Reading : Inches.	Speed of Air : Feet per Second.	Manometer Reading : Inches.	Speed of Air : Feet per Second.	Manometer Reading : Inches.	Speed of Air : Feet per Second.
0.001	0.903	0.039	5.638	0.077	7.922
0.002	1.277	0.040	5.710	0.078	7.974
0.003	1.564	0.041	5.781	0.079	8.025
0.004	1.806	0.042	5.851	0.080	8.075
0.005	2.019	0.043	5.921	0.081	8.125
0.006	2.212	0.044	5.989	0.082	8.175
0.007	2.389	0.045	6.056	0.083	8.225
0.008	2.554	0.046	6.123	0.084	8.275
0.009	2.709	0.047	6.189	0.085	8.324
0.010	2.855	0.048	6.255	0.086	8.373
0.011	2.994	0.049	6.320	0.087	8.421
0.012	3.127	0.050	6.384	0.088	8.469
0.013	3.255	0.051	6.448	0.089	8.517
0.014	3.378	0.052	6.510	0.090	8.565
0.015	3.497	0.053	6.572	0.091	8.613
0.016	3.612	0.054	6.634	0.092	8.660
0.017	3.723	0.055	6.695	0.093	8.707
0.018	3.830	0.056	6.756	0.094	8.754
0.019	3.935	0.057	6.816	0.095	8.800
0.020	4.038	0.058	6.876	0.096	8.846
0.021	4.137	0.059	6.935	0.097	8.892
0.022	4.235	0.060	6.993	0.098	8.938
0.023	4.330	0.061	7.051	0.099	8.983
0.024	4.423	0.062	7.109	0.100	9.028
0.025	4.514	0.063	7.166	0.102	9.118
0.026	4.604	0.064	7.223	0.104	9.207
0.027	4.691	0.065	7.279	0.106	9.295
0.028	4.777	0.066	7.335	0.108	9.383
0.029	4.862	0.067	7.390	0.110	9.469
0.030	4.945	0.068	7.445	0.112	9.554
0.031	5.027	0.069	7.500	0.114	9.639
0.032	5.107	0.070	7.554	0.116	9.724
0.033	5.187	0.071	7.608	0.118	9.808
0.034	5.265	0.072	7.661	0.120	9.891
0.035	5.342	0.073	7.713	0.122	9.972
0.036	5.418	0.074	7.766	0.124	10.05
0.037	5.492	0.075	7.819	0.126	10.13
0.038	5.565	0.076	7.871	0.128	10.21

TABLE 1.—*continued.*

Manometer Reading : Inches.	Speed of Air : Feet per Second.	Manometer Reading : Inches.	Speed of Air : Feet per Second.	Manometer Reading : Inches.	Speed of Air : Feet per Second.
0·130	10·29	0·222	13·45	0·314	16·00
0·132	10·37	0·224	13·51	0·316	16·05
0·134	10·45	0·226	13·57	0·318	16·10
0·136	10·53	0·228	13·63	0·320	16·15
0·138	10·60	0·230	13·70	0·322	16·20
0·140	10·68	0·232	13·76	0·324	16·25
0·142	10·76	0·234	13·82	0·326	16·30
0·144	10·83	0·236	13·88	0·328	16·35
0·146	10·91	0·238	13·94	0·330	16·40
0·148	10·98	0·240	13·99	0·332	16·45
0·150	11·06	0·242	14·05	0·334	16·50
0·152	11·13	0·244	14·11	0·336	16·55
0·154	11·20	0·246	14·17	0·338	16·60
0·156	11·27	0·248	14·23	0·340	16·65
0·158	11·34	0·250	14·28	0·342	16·70
0·160	11·42	0·252	14·34	0·344	16·75
0·162	11·49	0·254	14·40	0·346	16·80
0·164	11·56	0·256	14·45	0·348	16·85
0·166	11·63	0·258	14·50	0·350	16·89
0·168	11·70	0·260	14·56	0·352	16·94
0·170	11·77	0·262	14·62	0·354	16·99
0·172	11·84	0·264	14·68	0·356	17·04
0·174	11·91	0·266	14·74	0·358	17·09
0·176	11·98	0·268	14·79	0·360	17·13
0·178	12·05	0·270	14·84	0·362	17·18
0·180	12·11	0·272	14·90	0·364	17·23
0·182	12·18	0·274	14·96	0·366	17·28
0·184	12·25	0·276	15·01	0·368	17·33
0·186	12·31	0·278	15·06	0·370	17·37
0·188	12·38	0·280	15·11	0·372	17·42
0·190	12·45	0·282	15·17	0·374	17·47
0·192	12·51	0·284	15·23	0·376	17·52
0·194	12·57	0·286	15·28	0·378	17·56
0·196	12·64	0·288	15·33	0·380	17·60
0·198	12·71	0·290	15·38	0·382	17·65
0·200	12·77	0·292	15·44	0·384	17·70
0·202	12·83	0·294	15·49	0·386	17·75
0·204	12·90	0·296	15·54	0·388	17·79
0·206	12·96	0·298	15·59	0·390	17·83
0·208	13·02	0·300	15·64	0·392	17·88
0·210	13·08	0·302	15·70	0·394	17·93
0·212	13·15	0·304	15·75	0·396	17·98
0·214	13·21	0·306	15·80	0·398	18·02
0·216	13·27	0·308	15·85	0·400	18·06
0·218	13·33	0·310	15·90	0·402	18·11
0·220	13·39	0·312	15·95	0·404	18·16

TABLE I.—*continued.*

Manometer Reading: Inches.	Speed of Air: Feet per Second.	Manometer Reading: Inches.	Speed of Air: Feet per Second.	Manometer Reading: Inches.	Speed of Air: Feet per Second.
0.406	18.20	0.458	19.32	0.550	21.17
0.408	18.24	0.460	19.36	0.560	21.37
0.410	18.28	0.462	19.41	0.570	21.56
0.412	18.33	0.464	19.45	0.580	21.75
0.414	18.38	0.466	19.49	0.590	21.94
0.416	18.42	0.468	19.53	0.600	22.12
0.418	18.46	0.470	19.57	0.610	22.30
0.420	18.50	0.472	19.62	0.620	22.48
0.422	18.55	0.474	19.66	0.630	22.66
0.424	18.60	0.476	19.70	0.640	22.84
0.426	18.64	0.478	19.74	0.650	22.02
0.428	18.68	0.480	19.78	0.660	23.20
0.430	18.72	0.482	19.82	0.670	23.38
0.432	18.77	0.484	19.86	0.680	23.55
0.434	18.82	0.486	19.90	0.690	23.72
0.436	18.86	0.488	19.94	0.700	23.89
0.438	18.90	0.490	19.98	0.750	24.73
0.440	18.94	0.492	20.02	0.800	25.54
0.442	18.99	0.494	20.06	0.850	26.32
0.444	19.03	0.496	20.10	0.900	27.08
0.446	19.07	0.498	20.14	0.950	27.83
0.448	19.11	0.500	20.18	1.000	28.55
0.450	19.15	0.510	20.38	1.250	31.93
0.452	19.20	0.520	20.58	1.500	34.97
0.454	19.24	0.530	20.78	1.750	37.77
0.456	19.28	0.540	20.98	2.000	40.87

TABLE II.

TABLE of the VALUES of $\sqrt{\frac{519}{459+t}}$ for VALUES of t from
0 to 1,000; or CORRECTIONS for TEMPERATURE.

t Degrees Fahrenheit.	$\sqrt{\frac{519}{459+t}}$	t Degrees Fahrenheit.	$\sqrt{\frac{519}{459+t}}$	t Degrees Fahrenheit.	$\sqrt{\frac{519}{459+t}}$
0	1.0634	20	1.0409	40	1.0198
5	1.0577	25	1.0355	45	1.0148
10	1.0520	30	1.0302	50	1.0098
15	1.0464	35	1.0250	55	1.0049

TABLE II.—*continued.*

t Degrees Fahrenheit.	$\sqrt{\frac{519}{459 + t}}$	t Degrees Fahrenheit.	$\sqrt{\frac{519}{459 + t}}$	t Degrees Fahrenheit.	$\sqrt{\frac{519}{459 + t}}$
60	1.0000	290	0.8324	520	0.7280
65	0.9952	295	0.8296	525	0.7261
70	0.9905	300	0.8269	530	0.7243
75	0.9858	305	0.8242	535	0.7225
80	0.9812	310	0.8215	540	0.7207
85	0.9767	315	0.8189	545	0.7189
90	0.9723	320	0.8163	550	0.7171
95	0.9679	325	0.8137	555	0.7153
100	0.9636	330	0.8111	560	0.7137
105	0.9593	335	0.8085	565	0.7119
110	0.9551	340	0.8060	570	0.7102
115	0.9509	345	0.8035	575	0.7085
120	0.9468	350	0.8010	580	0.7068
125	0.9428	355	0.7985	585	0.7051
130	0.9388	360	0.7960	590	0.7034
135	0.9348	365	0.7936	595	0.7017
140	0.9309	370	0.7912	600	0.7000
145	0.9270	375	0.7888	605	0.6983
150	0.9232	380	0.7865	610	0.6967
155	0.9194	385	0.7842	615	0.6951
160	0.9156	390	0.7819	620	0.6935
165	0.9119	395	0.7786	625	0.6919
170	0.9083	400	0.7763	630	0.6903
175	0.9047	405	0.7741	635	0.6887
180	0.9012	410	0.7729	640	0.6871
185	0.8977	415	0.7707	645	0.6856
190	0.8943	420	0.7685	650	0.6841
195	0.8909	425	0.7663	655	0.6826
200	0.8875	430	0.7641	660	0.6811
205	0.8841	435	0.7619	665	0.6796
210	0.8808	440	0.7598	670	0.6781
215	0.8775	445	0.7577	675	0.6766
220	0.8743	450	0.7556	680	0.6751
225	0.8711	455	0.7535	685	0.6736
230	0.8680	460	0.7514	690	0.6721
235	0.8649	465	0.7494	695	0.6706
240	0.8618	470	0.7474	700	0.6691
245	0.8587	475	0.7454	705	0.6676
250	0.8557	480	0.7434	710	0.6662
255	0.8527	485	0.7414	715	0.6648
260	0.8497	490	0.7394	720	0.6634
265	0.8467	495	0.7375	725	0.6620
270	0.8438	500	0.7356	730	0.6606
275	0.8409	505	0.7337	735	0.6592
280	0.8380	510	0.7318	740	0.6578
285	0.8352	515	0.7299	745	0.6565

TABLE II.—*continued.*

t Degrees Fahrenheit.	$\sqrt{\frac{519}{459 + t}}$	t Degrees Fahrenheit.	$\sqrt{\frac{519}{459 + t}}$	t Degrees Fahrenheit.	$\sqrt{\frac{519}{459 + t}}$
750	0.6552	835	0.6333	920	0.6136
755	0.6538	840	0.6321	925	0.6125
760	0.6524	845	0.6309	930	0.6114
765	0.6511	850	0.6297	935	0.6103
770	0.6498	855	0.6285	940	0.6092
775	0.6485	860	0.6273	945	0.6081
780	0.6472	865	0.6261	950	0.6070
785	0.6459	870	0.6249	955	0.6059
790	0.6446	875	0.6237	960	0.6048
795	0.6433	880	0.6225	965	0.6037
800	0.6420	885	0.6214	970	0.6026
805	0.6407	890	0.6203	975	0.6015
810	0.6395	895	0.6192	980	0.6004
815	0.6382	900	0.6181	985	0.5994
820	0.6369	905	0.6169	990	0.5984
825	0.6357	910	0.6158	995	0.5974
830	0.6345	915	0.6147	1000	0.5964

FOURTH ORDINARY MEETING.

ROYAL INSTITUTION, 29th November, 1869.

JOHN BIRKBECK NEVINS, M.D., PRESIDENT, in the
Chair.

Messrs. H. H. Statham, Junr., and Isaac Roberts were unanimously elected Ordinary Members.

The paper "On National Education," by Mr. Flueck, which had been appointed for the Meeting, was not read, owing to that gentleman's indisposition.

It was therefore moved by the Rev. Dr. Ginsburg, and seconded by the Hon. Secretary, "That the subject of National Education should form the topic of discussion for the evening," which was carried.

The President then read an abstract, explanatory of the scheme put forth by the Manchester Educational Union. This gave rise to a lengthened discussion, which occupied the remainder of the evening.

FIFTH ORDINARY MEETING.

ROYAL INSTITUTION, 13th December, 1869.

JOHN BIRKBECK NEVINS, M.D., PRESIDENT, in the
Chair.

Ladies were invited to attend this Meeting.

Messrs. Alexander N. Tate, F.C.S., R. W. Roulston, and Harold Waterhouse were unanimously elected Ordinary Members.

Mr. Mott exhibited some large sketch maps of the route of the Suez Canal, and gave some interesting particulars in explanation. He also read Dr. Livingstone's letter, published that day in *The Times* newspaper, and pointed out the places mentioned on a large sectional map of Africa (territory of the Cazembe), exhibited at the previous meeting.

Mr. E. Davies, F.C.S., exhibited some artificial alizarine, in powder and paste, prepared from anthracen.

Mr. Flueck then read his paper "On National Education," which had been postponed from the previous meeting.

SIXTH ORDINARY MEETING,

ROYAL INSTITUTION, 10th January, 1870.

JOHN BIRKBECK NEVINS, M.D., PRESIDENT, in the Chair.

Mr. T. J. Moore introduced Captain Berry (ship *Richard Cobden*), Associate of the Society, and brought before the meeting a drawing, and the skull, of a small Bottle-nose Whale, which appeared to be the species described by Dr. Gray, under the name of *Lagenorhynchus Electra*, and of which only the skull had hitherto been known. The drawing was made, and dimensions had been taken, from the skin of the creature. This had been brought home in pickle, but, unfortunately, from various circumstances, could not be preserved. Specimens of *Anabas*, *Ophiocephalus*, and other fish, forming part of a collection made by Captain Berry, at the Irawady, were also shown, as well as the skull and horns of a Muntjac deer, and skull and horns of Eld's Deer (*Cervus [panolia] Eldi*), from Rangoon; and a large singular membranous mass of fish spawn. This mass

(which was of a reddish brown colour, of oval shape, eight inches long, and five inches in diameter), was taken by Captain Berry from the stomach of a shark, captured in lat. 7 deg. N., long. 65 E., and consisted of ova of the size of those of the herring, and loosely held together by their membranous folds. Embedded in the very centre of the mass, was a hard substance, which could be felt, but in nowise seen. On Mr. Moore cutting into the mass, this substance was found to be a young Turtle (*Chelonia imbricata*?), six inches long! The explanation of this seeming mystery would probably be, that the young turtle had swum into a quantity of fish spawn, and, becoming entangled therein, had become more and more completely enveloped the more he struggled to free himself, and that turtle and spawn had been swallowed together.

Mr. Moore also exhibited a very large specimen of Cuttle fish (*Octopus*), the head and body of which measured a foot in length, and the longer tentacles twenty inches, making a total length of two feet eight inches. This magnificent specimen had been collected off Agulhas Bank, by Captain John Walker (ship *St. Magnus*), Associate of the Society, and presented to the Museum, with a bottle containing fish spawn, found in lat. 35.55 S., long. 7.40 E., attached to a piece of drift wood, and similar in character to that brought by Capt. Berry. Captain Walker had also collected several bottles of small marine specimens, but these were reserved for a future meeting. All the specimens above-mentioned had been presented to the Museum by the gentlemen named.

The following paper was then read :

ON THE ARTIFICIAL FORMATION OF ORGANIC COMPOUNDS.

By J. CAMPBELL BROWN, D.Sc. LOND., F.C.S.

IN the early days of accurate chemical research, *i.e.*, in the beginning of this century, it was believed that plants and animals were able to elaborate chemical compounds of great complexity of structure, by means of their vital force, altogether independently of ordinary chemical laws, and often in defiance of these laws. It was supposed that the art of the chemist could only enable him to examine these substances, and enrich science by a description of their properties. Sometimes he might turn them to practical use, in medicine or the arts; and he could always pull them to pieces; but he could never build them up again.

The history of these compounds was considered a distinct branch of science—"Organic Chemistry."

In the department of Mineral Chemistry, however, the chemist could go further. When he had studied an inorganic compound, and pulled it to pieces—analysed it—he could put the parts together again at will; and he could even create new mineral species. By the study of syntheses and decompositions, laws were discovered which regulate the combinations of the elements, so long as they are beyond the influence of any organised body, but which were supposed to be held in abeyance, and superseded, by the so-called "vital force."

Further labours proved that heat, the great instrument of destruction, or rather of decomposition (for nothing is ever destroyed), is able also to build up complicated chemical structures, just as well as the living cells and tissues of

DIAGRAMS.

FIG. 1.

○ HYDROGEN. MONAD.

● { CHLORINE. MONAD.
BROMINE. MONAD.

⊖ OXYGEN. DYAD.

⋈ NITROGEN. TRIAD.

⊕ CARBON. TETRAD.

FIG. 2.



FIG. 3.
MARSH GAS.
 C H_4



FIG. 4.
DIFFERENCE.
 C H_2

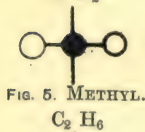


FIG. 5. METHYL.
 $\text{C}_2 \text{ H}_6$

FIG. 6.
ACETYLENE.
 $\text{C}_2 \text{ H}_2$



FIG. 7.
ETHYLENE.
 $\text{C}_2 \text{ H}_4$

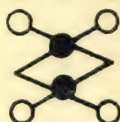


FIG. 8.
TRITYLENE.
 $\text{C}_3 \text{ H}_6$

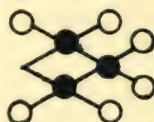


FIG. 9.
TETRYLENE.
 $\text{C}_4 \text{ H}_8$

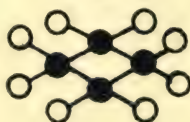


FIG. 10.
BENZOL.
 $\text{C}_6 \text{ H}_6$



FIG. 11.

ANILINE.
 $\text{C}_6 \text{ H}_7 \text{ N}$



FIG. 12.

NAPHTHALIN.
 $\text{C}_{10} \text{ H}_8$

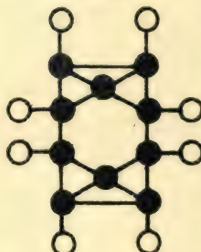


FIG. 13.
ANTHRACENE.
 $\text{C}_{14} \text{ H}_{10}$

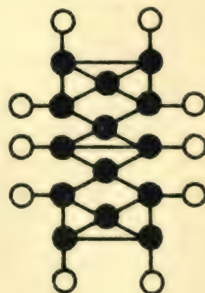


FIG. 14.
ANTHRAQUINONE.
 $\text{C}_{14} \text{ H}_8 \text{ O}_2$

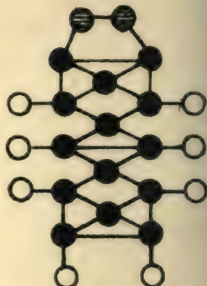


FIG. 15.
BIBROM-ANTHRAQUINONE.
 $\text{C}_{14} \text{ H}_6 \text{ Br}_2 \text{ O}_2$

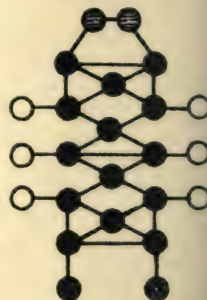
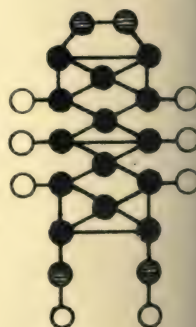


FIG. 16
ALIZARIN.
 $\text{C}_{14} \text{ H}_8 \text{ O}_4$



plants and animals; and, further, that ordinary chemical laws are of universal application; and that living organisms, instead of defying these laws, actually follow them, in performing their functions, and in constructing the so-called organic compounds.

Once started on the work of construction, experimenters soon formed new compounds which had never been formed by living organisms, but which were similarly constituted, and possessed similar properties, to those which are produced by plants and animals.

Organic chemistry is no longer a distinct science, with laws of its own, but only an artificial and convenient division of the science of chemistry, embracing an innumerable series of compounds, which have but one feature in common; namely, they all contain *carbon*.

The reason why the compounds of carbon are so numerous depends on a property of the atoms, which has been called atomicity, or quantivalence. The atoms of each element have the power of uniting with only a certain number of other atoms. Whether this property arises from centres of attraction in the atoms, or some other cause, we do not know.

1. Many atoms can only unite with one other atom. Hydrogen is the type of this class; its atoms have but one unit of affinity. We may call them one-handed atoms—*Monads*.

2. Others, of which Oxygen is the type, have two units of affinity. Each atom of this class may unite with two monad atoms; or it may be satisfied with the two affinity units of a single atom like itself. We may call them two-handed atoms—*Dyads*. (See Diagrams, Fig. 1.)

3. Nitrogen, and some other elements, are three-handed atoms, or *Triads*.

4. Carbon is the principal *Tetrad* element. Its atoms

have four units of affinity, which may enable it to unite with (1) one triad and one monad, or (2) with two dyads, or (3) with one dyad and two monads, or (4) with four monads. Further, one atom may be united to a second atom of carbon by one affinity-unit of each, when the condensed atom is capable of uniting with so many as six monads (see Fig. 2); and this process of condensation may be continued until a dense carbon atom is found capable of uniting with any finite even number of atoms.

In the diagram, I have represented these affinity-units by lines, or bonds; and I hope it is understood that these have no real existence in nature, but merely represent the attractive forces which keep the atoms together in one molecule, just as the brass rods of an orrery represent the attractive forces which keep the sun and planets together in one system. In all cases, the molecule is the smallest quantity which can exist in the free state, and, when in the state of vapour, has always the volume of two united atoms of hydrogen, $H-H$.

The first definite organic compound that was produced artificially was Urea. This was formed by Wohler, in 1828, by the action of heat on cyanate of ammonium.

If we mix a solution of a salt of cyanic acid with a solution of a salt of ammonium, both of which can be formed from the free elements of which they are composed, we get a solution of cyanate of ammonium. I prepare some of this salt in a test-tube. It is difficult to show you the nature of the change which takes place in its constitution when boiled; but, at any rate, I shall show you that a change does take place. While one half of the solution is being boiled in the dish, I add to the other half a few drops of a strong acid. The weaker acid, cyanic acid, is expelled; and you observe the effervescence which is produced by the addition of an acid. The salt is consti-

tuted thus:— $\left. \begin{smallmatrix} \text{N} & \text{H}_4 \\ \text{C} & \text{N} \end{smallmatrix} \right\} \text{O}$; but, after being boiled down, during which operation nothing but water escapes, the elements have rearranged themselves thus— $\left. \begin{smallmatrix} \text{C} & \text{O} \\ \text{H}_4 \end{smallmatrix} \right\} \text{N}$. There is no cyanic acid present. The solution contains, not a salt, but a basic body, whose binding atom is nitrogen, not oxygen as before; and now, on the addition of a strong acid, you observe no effervescence. There is no weak acid to be expelled; but the strong acid unites with the newly formed base to form a salt of urea, quite undistinguishable from that which we get from urine.

Before attempting to build up any substance, it is necessary, first, to ascertain of what elements it is composed, and in what proportions these are present; and second, how the constituent elements are grouped. It is impossible to ascertain the position of the atoms, as we can of the rooms in a house; but we can ascertain, by studying the decompositions of a substance, what are the relations of the constituent atoms to each other.

The first step in organic syntheses is to get carbon to unite with hydrogen. This is done by passing electric currents of high tension between carbon poles, in an atmosphere of hydrogen. At the high temperature of the electric spark, two atoms of each of the two elements combine to form a molecule of a gas called Acetylene, C_2H_2 . (See Fig. 6.) It combines with copper, and the compound may be acted on by hydrogen, evolved by the action of ammonia on zinc, when acetylene unites with two additional atoms of hydrogen, in the nascent state, *i. e.*, just at the instant of generation, when they are more ready to combine than after they have assumed the free gaseous condition. We have now got Ethylene, one of the constituents of coal gas, C_2H_4 . (See Fig. 7.)

We can make this gas unite with the elements of water by first dissolving it in sulphuric acid, then diluting with water, and distilling, when the substance $C_2H_6O_2$, ordinary alcohol, is obtained.

By further exposing the vapour of alcohol to a red heat, in a porcelain tube, we get a series of compounds richer in carbon, formed by the condensation of several simple hydro-carbon compounds into one molecule.

First, there is a series formed by the successive addition of CH_2 (Fig. 4) to Marsh Gas, another constituent of coal gas, which can also be formed from its simple elements. Another series is formed from ethylene, by the successive addition of CH_2 (Figs. 8, 9). Other series have the carbon more condensed; such is the series of which Benzol, C_6H_6 , is the head (Figs. 10, 11), from which most of the brilliant new dyes have been prepared.

Other dense hydro-carbons are mentioned in the diagram.

Each of these hydro-carbons is the starting-point of a great variety of substances, obtained from them by substituting other elements, or even complex groups, for hydrogen; for it is often possible to get some elements or groups into union with carbon, by replacing hydrogen which is already in union with it, although they will not combine with it directly.

A valuable dye, Alizarin, the colouring principle of Madder and Garancin, and the only one which forms good reds (Turkey red), and purples, available for printing upon cotton goods, has been for more than twenty years the object of repeated attempts to imitate the processes carried on in the tissues of the madder root (*Rubia Tinctoria*).

Analyses led to the formula $C_{10}H_6O_3$, as expressing the proportions of the constituents; but no evidence had been obtained as to the degree of condensation, so that any other formula, expressing the same relative proportions of

C H and O might be the true one. The general belief, that it had a 10-carbon formula, led experimenters to start from the 10-carbon Hydro-Carbon Naphthalin $C_{10} H_8$ (Fig. 12), a substance which is deposited in gas pipes, and of course occurs in coal tar. A specimen is on the table. Several operators succeeded in producing from Naphthalin substances similar to Alizarin, but none of these gave the brilliant hues of the true dye.

Last year, two chemists in Berlin, Graebe and Liebermann, obtained from Alizarin, by distillation with powdered zinc, a substance with which they were acquainted, Anthracene. They knew that it contained fourteen atoms of carbon, and they inferred that Alizarin contained at least $C_{14} H_8 O_4$, figures which agree with the results of analysis, as well as the old formula which we find in books, $C_{10} H_8 O_3$.

They accordingly attempted to produce a substance having this composition from Anthracene, $C_{14} H_{10}$ (Fig. 13), of which a specimen is on the table. It is of a pale yellow colour, crystallises in flakes, and is obtained by distilling asphalt with superheated steam. Their efforts were crowned with complete success, and all coal-bearing countries are now no longer dependent upon warm madder-growing countries for their supplies of this valuable dye.

Starting with Anthracene, they oxidised it by any of the ordinary methods, as by heating with potassic bichromate and sulphuric acid.

In any case, this beautiful yellow crystalline substance, of which several specimens are on the table, is obtained—Anthraquinone. It consists of anthracene, in which two atoms of hydrogen have been replaced by a double atom of oxygen (Fig. 14), $C_{14} H_8 O_2$.

If we now replace two more atoms of hydrogen by the group H O, Hydroxyl, we get the substance required (see diagram). A general method for effecting this sub-

stitution has long been known, viz., by first replacing H by Br directly, and then replacing this by H O, by the action of caustic potash. This was the method adopted by Graebe and Liebermann, and I have found that it can be applied with great ease. On heating Anthraquinone with Bromine, there is formed Bibromanthraquinone (Fig. 15), a crystalline substance, of which there is a specimen in the sealed tube; then, by boiling this with potash, the bromine is removed in union with potassium, while Hydroxyl, two atoms, take its place, forming Alizarin (Fig. 16). It is soluble in alcohol and alkalies, as you see, and is precipitated by acids, and behaves in every way as the natural product. The spectrum absorption-bands of the two are identical.

These diagrams are not merely imaginary formulæ; although the mode of grouping is imaginary, yet the diagrammatic representations show the relations of the atoms, and the changes which take place in the several reactions; and they represent the relative amount of matter condensed into one volume of the different substances. The substances which they represent are on the table before you, and have been proved to have the composition indicated.

And now we see how deeply commerce and manufactures are interested in attentively following the progress of science. Since the discovery of the true structure of Alizarin, last Spring, three patents at least have been taken out for its production; and several manufacturers are busily engaged in making it. One firm employs a cheaper method than that with bromine, for effecting the second change: the Anthraquinone is dissolved in sulphuric acid, and treated with potash at 180° C. On the small scale, I find it difficult to succeed by this method; the colour produced is not true Alizarin, since the cloth dyed with it does not assume the brilliant tints which it does when

either the natural product, or the artificial substance prepared by the first method above-mentioned, is employed.

As an instance of new species produced in imitation of nature : here is a new alkaloid produced by Dr. Matthiesen.

Morphia consists of $C_{17}H_{19}NO_3$. It is narcotic; is insoluble in ether and chloroform. When sealed up with twenty times its weight of hydrochloric acid, and heated to 300° for some hours, there results the black resinous mass which you see in the specimen tube. When this resinous mass is dissolved in water, and treated with sodic carbonate to separate the alkaloid, there is precipitated a substance which is soluble in ether. The ethereal solution, when decanted from the impurities, and treated with a drop of acid, deposits the salt, of which a specimen is here sealed up in a test tube. It is rapidly acted on by the air, which oxidizes and darkens the white salt. An ethereal solution of the pure alkaloid becomes green on exposure, as you will see in one of the test tubes. From its origin, this alkaloid is called Apomorphia : and it differs from morphia by elements of one molecule of water, the composition being $C_{17}H_{17}NO_3$. It possesses the useful, though disagreeable property, of causing vomiting when taken in $\frac{1}{4}$ th-grain doses, and causes no prostration nor after ill effects. Probably the great proneness to oxidation is the reason why we have not heard more about it since its discovery.

These are instances of the power which the chemist has over the elements, to mould them into forms interesting and useful to mankind. Allow me now to make a few remarks on the limits of this power.

Since by means of the physical forces we are able to do all that living organisms can do, in the way of

constructing chemical compounds, is it a logical conclusion that the so-called "Vital force" is nothing more than a peculiar manifestation or grouping of the Physical forces? Surely not. It is, indeed, quite true, as Dr. Carpenter has shown, that there is a correlation between vital and physical forces: that, in fact, the cell converts the external physical forces, especially heat, into vital actions, "and that, therefore, all these forces are but different modes of action of one and the same agency, which, operating through inorganic matter, manifests itself as electricity, magnetism, light, heat, &c.; and, operating through organised structures, effects growth, development, chemico-vital transformations, and manifests itself as nervous energy and muscular power."

But whence this power of so directing the physical forces that they shall manifest themselves in a manner which they never do in the absence of living cells? Does it not indicate a "directive power," which is an invariable constituent of life, over and above the physical forces? The case stands thus:—Human hands, guided by human intellect, can, with certain materials, and with the physical forces as instruments, produce certain results; and living cells, guided by the unknown directive principle of life, can, with the same materials and with the same forces as instruments, produce the same results. The logical conclusion surely is, that the human intellect and the principle of life have a common origin or cause, which is beyond the region of the physical forces. If we wish to know the nature of this power, and ask Physics, as some leaders of popular thought bid us, Physics cannot tell. If we ask Metaphysics, it cannot tell. We must seek information elsewhere.

But living organised matter gives other evidence of the presence of a power which we do not find in matter acted

on by physical forces merely. *It can produce other living matter like to itself.*

Professor Huxley's question, in the notorious Edinburgh address, "What justification is there for the assumption of the existence in the living matter of a something which has no representative or correlative in the not living matter which gave rise to it?" has been so frequently and easily answered, that I am almost inclined to apologise for alluding to it. If we follow the methods of experimental enquiry expounded by Mr. J. S. Mill, in his *Logic*, the case comes under his third canon, which he enunciates thus:—"If two or more instances in which the phenomenon occurs have only one circumstance in common, while two or more instances in which it does not occur have nothing in common save the absence of that circumstance, the circumstance in which alone the two sets of instances differ is the effect, or the cause, or a necessary part of the cause, of the phenomenon." The phenomenon in question is the production of living organised matter; the instances in which it does occur are under an infinite variety of circumstances, but have always one circumstance in common, viz.—the presence of life in a living organism. In another set of instances, we have matter acted on by the physical forces in any variety of ways; but so long as no living organism is introduced, the dead matter never becomes organised, nor does it live; the logical conclusion is, that previously existing life, over and above the physical forces, is a necessary part of the cause of living organised matter.

EXTRAORDINARY MEETING.

ROYAL INSTITUTION, 17th January, 1870.

JOHN BIRKBECK NEVINS, M.D., PRESIDENT, in the
Chair.

The Meeting was called pursuant to a notice given at the previous Meeting, and the following paper was read :

ON THE UNSUITABLENESS OF EUCLID AS A TEXT-BOOK OF GEOMETRY.

BY THE REV. JOSHUA JONES, D.C.L.,

PRINCIPAL OF KING WILLIAM'S COLLEGE, ISLE OF MAN,
LATE SENIOR MATHEMATICAL, AND JOHNSON MATHEMATICAL SCHOLAR, OXFORD.

AMONG the various questions raised by the great educational movement of our times, not the least important is that of the merits, or demerits, of Euclid, as a text-book of Elementary Geometry. As far as mathematicians are concerned, it is a question of the greatest interest. The subject, although only quite recently beginning to be fairly brought forward and discussed among ourselves, is by no means a new one. Two centuries ago an attempt to amend Euclid was made in Italy by J. Alphonso Borelli, who published a work under the title of *Euclides Restitutus*. It is now more than one hundred years since, both in our own country and in Germany, Euclid was assailed, and efforts made to provide a substitute. Years ago the subject has been fully considered in France and other parts of the continent, and Euclid with one voice condemned and abandoned. The matter of wonder is, not that the question is beginning to excite interest among ourselves, but that it should have been allowed to remain so long dormant. At last, however, it can be no longer set aside; the dissatisfaction hitherto latent is concentrating and gathering strength; the struggle is fairly commencing; and the defenders, if their position be tenable, must be prepared for defence, as the assailants are already marshalling their forces for the attack.

The whole question has been lately brought into prominence by the Report of the Schools Inquiry Commission. There it is suggested as a subject "well worth consideration

whether Euclid be the proper text-book for beginners.”* To give weight to this suggestion, reference is made to the evidence of Mr. Griffith, Assistant Secretary to the British Association, and a Mathematical and Natural Science Lecturer at Oxford, who “stated that in his opinion many boys had read six books of Euclid, who knew nothing of Geometry;” and to that of Professor Key, who “went so far as to express a wish to get rid of Euclid altogether, as a most illogical book.” To this we may add the opinion of Professor Sylvester who, as President of the Mathematical and Physical Section of the British Association, (*Exeter Meeting*, 1869,) expressed a wish that Euclid was “buried ‘deeper than did ever plummet sound,’ and out of the school boy’s reach.” The existence, however, of a wide-spread, deep, and increasing conviction, unfavourable to the retention of Euclid,—and the fact that we alone retain it as a text-book,—are in themselves circumstances sufficiently important to render investigation as to the grounds of our holding so unique a position desirable, and even necessary.

The defenders of Euclid as an elementary text-book may be fairly called upon to justify their position. The presumption is at once strong against them, as will probably be allowed by any one who takes into account the following considerations.

(1.) Euclid has been abandoned on the Continent, and nearly so in the United States; we alone retain it. Are we alone right, and all the rest of the educated world wrong? It may be so; but strong evidence in support of such a view should be forthcoming.

(2) Euclid’s *Elements* were written two thousand years ago. During that time Geometry has shared in the great progress of other branches of science; geometrical investigations have been eagerly carried on; new principles have been introduced, or at all events old ones have been presented in a new light;

* *Report of Schools Inquiry Commission*, vol. i., p. 30.

the science has been regarded from higher, or more far-reaching, points of view; the exigencies of advancing knowledge and civilisation have called forth wider applications; the experience of teachers for twenty centuries has been accumulating, and suggesting changes of method. Here is a book, written in the infancy of the science; before all its principles were fully discovered, and all its departments fairly reviewed; when therefore no general view of it as a whole could be taken, no logical arrangement of its facts and conclusions was possible, and no grasp of it as a whole could be secured. And yet it is just these very points, width of view, comprehensiveness of grasp, precise and logical apprehension of principles and facts, added to practical acquaintance with the capacity and mode of working of immature minds, and of the phenomena thence resulting, — an acquaintance only gained by experience in teaching, — which are the most essential qualifications for the author of a good elementary text-book. In the time of Euclid, the science was not sufficiently advanced to enable any one to possess these qualifications; and therefore such a book could not have been written. However highly valuable, then, as a treatise on Geometry Euclid may be, there is a *prima facie* case against its use as an elementary exposition of the science.

One would think it to be a matter of the plainest common sense, needing no argument, that the progress of a science necessarily entails a reconstruction of its basis, and a revision and rearrangement of the truths selected for elementary instruction. Who, in any other branch of exact or experimental science, would dream of using as a text-book for beginners a treatise written only a hundred years ago? We avail ourselves of modern improvements in every other department of human learning; why in Geometry alone are we to remain stationary, and set aside the accumulated knowledge and experience of mankind?

(3.) Euclid's work was probably never intended for an elementary text-book, but composed for quite a different purpose. Whether it was with the object of "shewing his contemporaries that a connected system of demonstration might be made without taking more than a certain number of postulates out of a collection" *; or "with a view to meeting all possible cavils"; it was certainly "not with a view of developing geometrical ideas in the most lucid and natural manner." † Now this is just what an elementary text-book should do. Therefore, whatever may be the merits of the book in other respects, it must be unsuitable for teaching the elements of the science to beginners; a purpose for which it was not intended, and was probably in Euclid's time never used.

Until a satisfactory explanation be given on these points, the case against the advocates of Euclid seems so strong, that all further argument may be deemed unnecessary. But their opponents are obliged to act on the offensive. Euclid has possession of the field; it has the advantage of a long historical tradition, and pretty nearly, as far as our country is concerned, undisturbed possession in its favour; it is entrenched by the arguments of that narrow conservatism, which thinks that whatever we and our fathers and forefathers have been accustomed to must be best; it is defended by the same weapons, which have resisted all progress and reform, political and social, as well as educational. We know Euclid; we know but little, or nothing at all, of any other geometrical text-book; none of us are quite satisfied with it; we all, more or less, admit its many faults; but still, from force of custom, we think it the best book attainable; call it prejudice, or "postjudice," ‡ or what you like; the question is decided at

* Smith's *Biog. Dict.*, art. "Euclides," p. 68, a.

† Mr. M. Arnold's *Report to School Inquiry Commission*, vol. vi., p. 507.

‡ *Athenæum*, July 18th, 1868, p. 72, where the word is defined "a clinging to past experience, often longer than is held judicious by after times."

once by most people without examination; and Euclid is retained. In such a case the party of progress and reform must not be content to remain quiet, resting on the goodness of their cause, and the weakness of their adversaries' position; but must be prepared to use actively and vigorously such means as lie in their power to carry their point. Nowhere perhaps is this inert force of prejudice stronger than in matters of education; it meets us, who are striving after improvement, at every turn, resting as a dead weight upon progress, and impeding our efforts to attain to a better state of things. Rash and ill-considered innovation,—change for the sake of change merely,—cannot be too strongly condemned. But in the stolid opposition, which supports institutions, or practices, simply on the score of long usage, in defiance of the expansion of human ideas and the growth of human experience, it is hard patiently to acquiesce.

It must be remembered at the outset, that the attack is against Euclid as an elementary text-book, not as a scientific treatise; though necessarily in the course of our argument much that affects it in this latter respect will be said. This, however, is merely incidental, and not part of our design. Nor is it our purpose to call attention to the many merits of the book; that these exist will of course be freely admitted; that they are as numerous as is generally supposed may be perhaps doubted. It has been even suggested that these very merits are such as partly to disqualify it for the purpose of an introduction to the study of Geometry.

We now proceed to discuss the faults of Euclid, which for the sake of clearness we shall classify under these four heads:—1. Phraseology. 2. Method. 3. Matter. 4. Particular doctrines.

I. PHRASEOLOGY.

- (1.) He is verbose. This defect is particularly manifest

in his definitions, where he sometimes endeavours to explain an idea in itself simple by a circumlocution, which adds nothing to its meaning. Thus the idea of a straight line is sufficiently clear and intelligible *per se*; while Euclid's definition of it as "that which lies evenly between its extreme points," not only adds nothing to the clearness of the conception, but is in itself "unintelligible."* The definition of a plane surface is open to the same objection; no one, who had not previously some idea of what a plane surface is, would gather any notion of it from Euclid's so-called definition. Again in the propositions, when the argument should flow on naturally and simply, it is often impeded and confused by a needless mass of verbiage. Instances of this are numerous, and are chiefly attributable to the next-mentioned defect, with which this one is closely allied.

(2.) The language is stiff and formal. The thought is frequently obscured, and the reasoning apparently to no purpose dragged out, with a view to maintaining the same rigid formality of expression. And so what is actually very simple frequently seems to the young learner difficult, and sometimes altogether unintelligible. He cannot understand what it is all about; and fails for some time at least to detect any meaning beneath the grotesque, and to him unwonted, phraseology.† He becomes weary; his grasp of the whole argument is impaired, and even not unfrequently altogether lost. From this cause we have often known boys fail in some of the most simple propositions, where the reasoning lies in a small compass, but the language is lengthened out, for the purpose of reducing the argument to a given set form.

* Lardner's *Euclid*, in *loc*.

† Cf. J. M. Wilson's Paper on *Euclid as a Text-book of Elementary Geometry*: "The Geometrical facts are generally simple, but are disguised and overlaid by the formality of the diction, which to most boys is barely intelligible. It is long before most boys succeed in detecting the geometry beneath the strange phraseology."—*Educational Times*, Sep. 1st, 1868, p. 127.

It must be remembered that this and the preceding defect are very serious, inasmuch as they are subversive of our special object in teaching Geometry, which is to get ideas into boys' heads, and not words.

(3.) The nomenclature is antiquated, —often infelicitous, —and does not meet the requirements of our present advanced stage of geometrical knowledge. Thus Euclid has no such words as locus, superposition, &c. Even modern treatises on Geometry may be improved by an augmented stock of appropriate words.

(4.) When a word is once used in a certain sense he has no notion of modifying or generalising its use in any way, though the necessity of the case may require it. This is especially noticeable in his treatment of angles. Having once set out with the conception of an angle as “the sharp corner made by the meeting of two lines,”* he never entertains the idea of an angle equal to, or greater than, two right angles, even though, as we shall see in the sequel, his reasoning may be simplified, or widened, in its application, by such an extension of meaning. Whatever may be the reason for this, —“whether it was an oversight”; or because he “thought the extension one which the student could make for himself;” or whether, as the same writer suggests, it was an error left uncorrected, because “the *Elements* were his last work, and he did not live to revise them;”† —the defect is one of great moment, and fraught with injurious consequences.

II. — METHOD.

(1.) Euclid's method is impaired by the undue limitation of his first principles. Instead of dealing with his subject naturally, and taking for granted at the outset all the first

* Smith's *Biog. Dict.*, art. “Euclid”; vol. ii., p. 65, b.

† *Ibid.*

principles, which the common sense and universal experience of mankind would allow to be necessarily true, and then using them in their fullest scope, he arbitrarily selects a few, — and those sometimes needlessly narrowed, — and constrains himself to develop his subject from these alone. We have already referred to the suggestion, that it was probably his express purpose to “shew how little need be assumed,” and on how small a number of necessary data the science of Geometry may be based.* Now though it may be useful to have “one branch of study in which the consequences are evolved from the smallest possible assumption of premises,”† yet these should be sufficient for the natural evolution therefrom of all the facts of the science, which otherwise will be unduly narrowed and constrained. That Euclid’s treatment of Geometry is open to objection on this score admits of no doubt. Thus the 3rd Postulate is an instance of a first principle needlessly restricted.* Instead of allowing a free use of the compass, and granting that its legs can be opened so as to measure any given length between their points, he only assumes that when the legs are opened so as to form any angle, if the extremity of one leg be fixed at a certain point, the extremity of the other may be made to trace a circle round that point as centre. Remove this restriction, and Propositions I. 2. and I. 3. become unnecessary. The development of a science from principles thus limited may be an exhibition of intellectual ingenuity, but can hardly tend to promote natural order, or precision, in its exposition.

(2.) Another fertile source of confusion is the “rejection of hypothetical constructions,” *i.e.*, refusing to examine the

* Professor Hirst’s *Preface to Wright’s Elementary Geometry*, page vi. “A main object with Euclid appears to have been to shew how little need be assumed in Geometry, and how much that is obvious as well as obscure may be demonstrated, and that too under difficulties which are never encountered, and in spite of restrictions which are never imposed.”

† *Athenæum*, August 22nd, 1868.

properties of a figure, before the construction of it is actually effected; or declining to recognise the existence, and reason upon the properties, of a point and line, before the methods for finding the one and drawing the other have been investigated. For example, although it is perfectly obvious, that every line has a middle point, and one only, and any reasoning based on this hypothesis would be legitimate, Euclid would not recognise this fact until he had shown how to find it. This is the cause of much disorder in the arrangement of thoughts, and confuses their natural order; the proper sequence of theorems is thereby disturbed; while the solutions of problems are often rendered inelegant, and of no practical value, because they have to be effected prematurely, before the properties of the figure have been sufficiently studied, and those best adapted for the construction selected. And so no proper classification of the science is possible. As Mr. Wilson, in the excellent paper before referred to in these pages, aptly says,* “if chemistry were taught under the condition that no material was to be used which had not been previously constructed and chemically examined, so that silicates must be studied before glass is used for collecting oxygen, the restriction would scarcely be more damaging to the scientific study of chemistry than this is to the study of geometry.” It is plain that no science, hampered with such a restriction, could be expounded in a simple, precise, and orderly manner. Its exposition must be more or less clumsy and unnatural. And so, as a matter of fact, we find that Euclid is frequently involved in unnecessary difficulties, and his whole method made unpractical, and even irrational.

(3.) Another defect is the neglect of the method of superposition, of which the *Athenæum* reviewer admits

* *Euclid as a Text Book of Elementary Geometry.*—*Educational Times*, Sept. 1st, 1868, p. 126.

“Euclid might with advantage have made more use.”* Now supposing it were at first a question, whether this moving of figures, without change of form or magnitude, and placing them bodily on others, be a legitimate kind of geometrical proof or not; yet when once admitted as valid, there can be no reason why it should not be used wherever it answers best.† Euclid allows, and rightly so, its validity, by using it in I. 4, and I. 8; and yet he makes no use of it in I. 5, and I. 26, where it is equally applicable, though thereby the demonstrations of these propositions would be much simplified, and their length and difficulty entirely vanish. So again he neglects to employ superposition in VI. 4, which might thereby be immediately deduced from VI. 2. The truth is, that so far from this method being questionable, it is, in the case of geometrical magnitudes, the ultimate criterion of equality and inequality to which the mind naturally refers, and which, consequently, in most cases, we employ.‡ Euclid has seen this, and laid it down in Axiom 8 as the special test of equality of magnitude. To ignore it, then, is to strike at one of those elementary mental processes on which geometrical truth ultimately rests; and, at the same time, to occasion an unnecessary separation between our scientific and practical geometrical methods.

(4.) His system is impaired by the exclusion of arithmetical considerations and processes. This is doubtless due to the defective state of arithmetical notation in his time, but it is none the less fatal to the due exposition and progress of the science. Some geometrical doctrines, *e. g.*, that of ratio

* *Athenæum*, Sept. 22nd, 1868.

† Professor Hirst's *Preface to Wright's Elementary Geometry*, p. viii. “No valid reason can be assigned why superposition, as a test of equality, should not be applied whenever it best serves our purpose.”

‡ Lardner's *Euclid*, p. 11. “In the most ordinary practical cases we use this test for determining equality; we apply the two things to be compared one to the other, and immediately infer their equality from their coincidence.”

and proportion, as we shall subsequently explain, and most questions relating to the area of figures can be much simplified by the introduction of arithmetical ideas and modes of working.* Indeed, without the assistance of Arithmetic, many important practical applications of Geometry are impossible. Nothing is gained by rigidly excluding such aid altogether; on the contrary, the only result is, that the Geometry learned theoretically is useless for practice, and another Geometry has to be acquired by practical men; whereas the theoretical and the practical branches may be made much more identical than they at present are. It must be remembered that this is no matter of proving geometrical questions by algebraical or arithmetical methods. The science of Geometry would still rest on its own principles. But in the present advanced stage of progress of the sciences, which renders their intermixture at certain points of contact inevitable, nothing is gained by attempting to keep each entirely separate from all others. It is far better from every point of view so to treat them, that they may shed mutual light on one another. Without this, neither can Geometry, nor any other science, be freely and fully developed, nor attain to the utmost reach of its power.†

(5.) Euclid is objectionable as an elementary treatise, because not the slightest explanation is ever given, why any particular course is adopted.‡ The student notices a considerable amount of pains taken, and sees a large number of words used, which to him perhaps seem unnecessary, because he has no conception of the particular difficulty in the author's mind, and has no idea of the object at which he is aiming. A hint as to this would often aid the young beginner in his apprehension of the course of reasoning; at

* Reynolds' *Elementary Geometry*, p. 58.

† Todhunter's *Euclid*, Appendix, p. 335. "The power of the modern methods is obtained chiefly by combining arithmetic and algebra with geometry."

‡ Smith's *Biog. Dict.*, art. "Euclides," vol. ii., p. 66, a.

all events, would prevent his regarding what he is learning as meaningless, or needlessly tedious. This fault alone, however meritorious and worthy of study the treatise may be in other respects, makes it unsuitable as an introduction to the study of Geometry.

(6.) A sixth objection to Euclid's method is the absence of any proper classification. This is mainly due to some of the defects previously discussed, as in the case of one of them was hinted.* In fact his treatment of his subject is forced and artificial; the natural order of ideas is involved, or inverted; and though some kind of classification is attempted to be made out by some writers, it is constrained, and not in accordance with the regular and rational arrangements of the principles and facts of the science. Indeed no principle of classification worthy of the name can be discovered in the book; propositions are arranged neither according to their relative importance, nor according to any really subsisting relations among themselves, nor with reference to their due position in the orderly development of the science. Take for instance Book I. Properties of the single triangle, and of two compared triangles,—of lines and angles,—of parallels and parallelograms,—of equal and equivalent figures,—theorems and problems,—are all mixed together in confused medley. There are no salient points; there are no indications, either from position, or arrangement, or otherwise, by which we can distinguish propositions of leading importance from those which are subsidiary, or of little consequence. And this is one of the reasons why those who have learned Geometry from Euclid have, as we shall subsequently see, so little notion of original work;—their ideas are never concentrated on leading points, nor grouped around well arranged divisions of the subject.

Such fundamental defects as some of these are incom-

* *Vide supra*, p. 67.

patible with the possibility of any annotated Euclid, or Euclid with a commentary, being, as by some has been suggested, a satisfactory elementary text-book of Geometry. They strike at the root of the matter, and necessitate the treatment of the subject, at all events for beginners, on different principles and by different methods.

III. MATTER.

(1.) In the first principles on which he bases his science, Euclid errs in other ways, and on the side of both excess and defect. Take the definitions. Some, *e. g.*, I. defs. 3, 6, 13, are statements, not definitions; others, *e. g.*, I. defs. 1, 2, 4, 5, 7, 9, are no definitions at all, for they do not explain their terms; others, *e. g.*, I. defs. 10, 11, 12, 14–17, 19–30, are mere verbal definitions; others are properly theorems, *e. g.*, I. def. 18, and III. defs. 1, 11.* Against I. def. 35, it may be urged that it is the statement of a negative, and not of a positive property; against I. defs. 4 and 7, that they are unintelligible.† Several definitions are wanting; *e. g.*, one explaining the distinction between equal and equivalent figures before I. 35: while others that are unnecessary, because never afterwards used, are introduced; *e. g.*, I. defs. 8, 26, 31–34, and III. def. 7. In the case of the postulates we have already seen how injuriously the 3rd is narrowed by not conceding the free use of the compasses; the others are similarly restricted by only allowing the use of a non-graduated rule. As regards the axioms, or common notions, the eleventh and twelfth are not self-evident but demonstrable theorems. For Axiom 11 Professor De Morgan proposes, “if two right lines coincide in two points they coincide when produced;” from which it follows, that “the doubles of all right angles are equal, and thence that all right

* *Companion to British Almanack*, 1849, p. 5.

† *Lardner's Euclid*, p. 3.

angles are equal,"* which would come in as a theorem between I. 12 and I. 13. Other proofs of this so called Axiom have been given.† Of Axiom 12 we shall speak more fully hereafter. Against Axioms 4 and 5 it has been objected, that they are "not sufficiently definite."‡ Lastly, even the Axioms are not complete, as before I. 7 one is needed, which is never formally stated: "if two magnitudes be equal, any magnitude greater than the one is greater than any magnitude less than the other."§

(2.) The *Elements* contain a considerable number of superfluous propositions. The list of these is so large, that only illustrations can be given. Sometimes we have the same proposition stated in different words proved over again. A remarkable instance of this is the case of III. 7 and III. 9; thus in III. 7 it is shewn, that from any point, which is not the centre, *only* two equal straight lines can be drawn to the circumference; in III. 9, that any point from which *more than* two equal straight lines can be drawn is the centre. So again, VI. 30 is only II. 11 under another name.—I. 6 is not wanted until II. 4; and, instead of being placed where it is, may be easily demonstrated after I. 18, or still more simply after I. 26.—I. 7 is only required for the purpose of proving I. 8; and if the latter proposition were differently proved might be dispensed with.|| II. 2 and 3 are corollaries to II. 1.—II. 14 is never required, at all events in parts of Euclid usually read, and is included in VI. 25.—VI. 9, and VI. 11 are particular cases respectively of VI. 10, and VI. 12.—VI. 14 is a particular case of VI. 23.—VI. 15 is an immediate consequence of VI. 14.—VI. 17 is a par-

* *Companion to British Almanack*, 1849, p. 6.

† Galbraith and Haughton's *Euclid*, p. 8,—Lardner's *Euclid*, p. 12.

‡ Lardner's *Euclid*, p. 12.

§ *Companion to British Almanack*, 1849, p. 7.

|| Todhunter's *Euclid*, notes in *loc.*, for this and the next following instances.

ticular case of VI. 16;—and the list may be indefinitely increased.

In no part of the work is this tedious superfluity more marked than it is in Books III. and IV. The whole of the ground of Book III. and something more, is included by Mr. Wilson, in his *Elementary Geometry*, in some ten or eleven theorems, and four problems. Under one theorem, viz., “the angle subtended at any point in the circumference by any arc of a circle is half of the angle subtended by the same arc at the centre,” which answers to Euclid III. 20, he comprises as simple corollaries Euclid III. 21, and its converse, not proved by Euclid,—III. 31,—III. 22,—III. 26, and its converse III. 27,—besides an important theorem respecting the angles in supplementary segments.—III. 26–29, may easily be thrown together under one proof; because in equal circles if either of the three pairs of arcs, chords, or angles be equal, all the other parts are necessarily equal,—III. 18 adds nothing to what has been proved in III. 16.* By an appropriate definition of internal and external segments, III. 35 and III. 36 may be thrown together under one enunciation: “if two chords cut one another, the rectangles under their segments are equal.”† As regards Book IV., Mr. Wilson gives two constructions, for constructing in and about a circle polygons of an even and odd number of sides respectively, and two preliminary theorems; and we acquire therefrom a much more extended power of constructing regular polygons in and about circles, than we should ever get from Euclid’s treatment of the same subject.

(3.) On the other hand, there are many important omissions. Here again we must be content with a few illustrations, which have been taken somewhat at random. Thus

* Todhunter’s *Euclid*, in loc.

† *Companion to British Almanack*, 1849, p. 11

Euclid omits the fourth case of the equality of triangles, where two sides and one angle, not included, are given equal, though subject to a certain restriction the triangles are equal. He omits also the converse to I. 15. After I. 11, he neglects to prove the property analogous to that in III. 7 and 8, viz., "the perpendicular is the shortest line that can be drawn from a given point to a given line; and of the rest, the line which is nearer to the perpendicular is less than one more remote: also only two equal straight lines can be drawn from the same point to the line, one on each side of the perpendicular." An important proposition, which should be in Book II., "the rectangle contained by the sum and difference of any two lines is equivalent to the difference of the squares on those lines," is wanting, though it would be useful in the demonstration of other propositions, and would include II. 5 and II. 6 as corollaries. Though the converse of III. 22 and of III. 32 are true and of great importance, Euclid takes no notice of them. In Book VI. the ideas of harmonic division, anharmonic ratio, &c. might have been introduced,* but are not referred to. It must be remembered, that these are but a few instances of a large number of omissions.

(4.) Not to go more into detail, we find proofs that may be simplified; *e.g.* I. 20, which is proved circuitously by means of I. 5 and I. 19, is capable of the most simple direct proof, if indeed it need any proof at all; I. 48 and III. 37 may be proved much more readily by using the indirect method; II. 9 and II. 10 admit of easy deduction from II. 4 and II. 7, instead of the long and tedious proofs which Euclid gives;† in III. 35, "the most general case of the proposition might have been first demonstrated, and the other more simple cases deduced from it,"‡—but, as the

* *Companion to British Almanack*, p. 17.

† Potts' *Euclid*, in *loc.*

‡ *Ibid.*

same writer goes on to observe, "this is not Euclid's method"; "he always commences with the more simple case and proceeds to the more difficult afterwards"; thus needlessly, we may add, augmenting the task of the student. We have imperfect proofs *e. g.*, I. 24 and VI. 22; possible extensions neglected, *e. g.*, I. 46, which might easily have been extended to the construction of a rectangle with given sides; and other defects in detail, which it would be tedious to enumerate, but by which conciseness, elegance, and often clearness, are utterly sacrificed.

IV. PARTICULAR DOCTRINES.

(1.) Angles.

The definition, on which Euclid bases his treatment of angles, is narrow and inadequate. As we have already stated, he starts with the conception of an angle as "the sharp corner made by the meeting of two lines," and never entertains the idea of two right angles making one angle, or of the existence of an angle greater than two right angles. The results of this restriction of the definition are most unfortunate.—I. 13 and I. 14 would be unnecessary, if the view of an angle was wide enough to include one of the magnitude of two right angles. In Book III. the evil of this narrow conception is especially patent.—III. 20, which is only partially proved, viz. for the case where the angle at the circumference is less than a right angle, if the definition were sufficiently wide, could be shewn to be universally true; and then III. 31 becomes an immediate consequence of it, and does not need an independent proof; III. 21, becomes simplified, because both the cases may be included under one proof; and III. 22 admits of the most easy demonstration. In VI. 33, though no notice is taken of the fact, Euclid, under the obligation imposed by his definition of proportion, gives up his restricted view, and

recognises tacitly the existence of angles, not only greater than two right angles, but of any magnitude, however great. The necessity of thus extending the notion of an angle becomes evident to the student, directly he begins to advance in his mathematical studies beyond the limits of elementary Geometry and Algebra; and so in Trigonometry we find the wider conception of the angle given at the very outset of the subject.

(2.) Parallels.

Euclid's doctrine of parallels depends on I. def. 35, and axiom 12. Against the definition it is objected, that it is a negative statement, and therefore inadequate as a basis of reasoning; against the axiom, that it is a theorem capable of proof; in short the converse of a proposition in Euclid, and needing demonstration as much as it does. For Euclid's definition and axiom various substitutes have been proposed. One of the most satisfactory of these definitions is based upon the conception of the identity, or mutual concomitance, of parallelism and equidistance; "parallel right lines are those which, however produced, are always equidistant;" which includes at all events the idea of Euclid's definition. Mr. Wilson, defining a straight line as a "line which has the same direction at all points of its length," defines parallels as "straight lines which are not parts of the same straight line, but have the same direction;"* from which and certain axioms Euclid's definition at once is deducible. For avoiding the difficulty in axiom 12, no less than thirty methods are enumerated by Colonel Thompson in his *Geometry without Axioms*. Professor Playfair adopts the following: "two straight lines which intersect one another cannot be both parallel to the same straight line;" which has the approval of De Morgan, Todhunter, and other eminent

* *Elementary Geometry*, pp. 8 and 11.

mathematicians, but is open to the objection that it may be directly inferred from I. 30. Lardner indeed considers that "no proposition which has ever yet been offered as a substitute for it is so nearly self evident," * as the axiom given by Euclid. With this point, however, and with a discussion of the various methods proposed for avoiding the difficulty, we are not at present concerned; we only refer to them to shew the general feeling that exists as to the unsatisfactory nature of Euclid's theory of parallels.

(3.) Proportion.

It may be difficult to give a satisfactory doctrine of proportion in Geometry; but it may be plainly asserted that Euclid's is unnatural and a violation of common sense. Every mind has the conception of proportion; and, as De Morgan says, "common sense requires we should satisfy this notion of proportion, not invent a new one for the occasions of geometry."† Who, it may be asked, ever decides four magnitudes to be proportionals, because he has conceived in his mind equimultiples of the first and third, and also of the second and fourth, and then formed a judgment as to the comparative magnitude of those equimultiples, according to the process described in Book V. def. 5? Whatever may be the mental process gone through, it may be safely affirmed, this is not the one.‡

Probably no correct idea of ratio, and therefore of the equality of ratios, *i. e.*, of proportion, can be formed, without bringing into account arithmetical notions. When Euclid, in Book V. def. 4, says that magnitudes "have a ratio to one another, when the less can be multiplied so as to exceed the

* Lardner's *Euclid*, Appendix II., page 315.

† *Companion to British Almanack*, 1849, page 13.

‡ Cf. J. M. Wilson's Paper on *Euclid as a Text-book of Elementary Geometry*: "It is quite certain no human being ever went through the process in Euclid's Fifth Definition."—*Educational Times*, Sept. 1st, 1868, p. 127.

other;" and when in def. 5, he uses the terms "equimultiples," "multiples," he seems to introduce an arithmetical idea;* when a magnitude is "multiplied" it is doubled, or trebled, &c., *i. e.*, the unit of magnitude, in the particular case, is added to itself two, or three times, &c.; for multiplication is only addition, repeated the number of times denoted by the multiplier. True, in Geometry, the unit is variable, and not fixed like the number unity in Arithmetic; but yet the idea of multiplication, or successive addition, is purely an arithmetical one. If then arithmetical notions thus lie at the root of the doctrine, why should they not be freely used in its application? The difficulty is occasioned by incommensurable magnitudes; but this may be surmounted by first proving the given proposition for commensurable magnitudes, and then passing on to the case of incommensurable, by help of the notion that two incommensurable magnitudes become commensurable, by adding to, or subtracting from, either a magnitude less than any given assigned magnitude, however small. It has been further objected to Euclid's definition of proportion, that it is utterly impossible to make trial of *all* the possible equimultiples of the first and third magnitudes, and also of the second and fourth; and also, that it ingeniously "avoids all questions of incommensurable magnitude, and deals only with multiples instead of parts."† Whether any better theory of proportion be possible, or not,—and we are aware that the negative is maintained by several eminent mathematicians,—Book V. is practically abandoned; and students are thus left without any preparation for Book VI., the study of which by them

* Smith's *Biog. Dict.*, art. "Euclides," vol. ii., p. 67, a—"A distinction should be drawn between Euclid's definition and his manner of applying it. Every one who understands it must see that it is an application of arithmetic."

† J. M. Wilson's Paper on *Euclid as a Text-book of Elementary Geometry*.—*Educational Times*, Sept. 1st, 1868, p. 127.

consequently becomes irrational, because there is no previous conception in their mind of the particular idea of proportion, which runs through it. Whatever, then, the substitute for Euclid's doctrine may be, whether it comprise arithmetical notions, or not, it must be better than having no doctrine at all,—in which position we are at present, owing to the almost universal practice of ignoring Book V.

Though the existence of some, or all, of these defects in Euclid is more, or less, freely admitted, yet it is urged that we should still adhere to the book; and that what is wanted is an amended Euclid, with its "faults noted and commented."* Such is the course gravely recommended by writers of great ability and eminence. Now surely, with the pressure of work under which we are suffering in education, it cannot be wise to present a confessedly difficult subject to a learner in a very faulty form, and then require him to undergo extra labour, and expend more time, in studying notes and commentaries to correct those faults. Would there not be something more than a chance of the error remaining fixed in the mind, and the comment being forgotten? What classical teacher would think of teaching his pupils a grammar full of defects, and then set them to learn a commentary to correct those defects? Would not such a waste of time and energy be rightly regarded as unwarrantable? At all events, it seems to be a dictate of the simplest common sense, that it would be better to present any subject to the learner, even in a less perfect form, provided only that it be accurate and clear so far as it goes, than to so teach him, that he has at every step to add to, or amend, or substitute something else for, what he has laboriously learned. That it should be necessary for its advocates to make such a suggestion is in itself a sufficient condemnation of Euclid as an elementary text-book.

* *Athenæum*, July 18th, 1868, p. 71.

So far, we have considered the theoretical objections to Euclid's *Elements*. We pass on now to view the matter on its practical side.

(1.) It is hardly possible to over-estimate the amount of discouragement which beginners feel in their study of Euclid. Our opinion, based upon no little experience, is that there is no branch of mathematical study in which young students take less interest than they do in geometry; and yet in itself it is capable of being made the most interesting of all. A student's interest in a subject is, for the most part, in direct proportion to the rapidity and certainty with which he is acquiring knowledge. If he finds that he is learning little or nothing, that his ideas of the subject are confused and his grasp feeble, that his progress, in short, is slow and uncertain, he becomes disheartened. How often this is the case with students of Euclid, the experience even of the best teachers can testify.

(2.) This result is due to the difficulty of Euclid, arising from the tedious length, and often unnecessarily abstruse reasoning of the propositions, and from other defects which have been already in these pages discussed. Now undue difficulty in a book, particularly if it be not inherent in the subject treated of, is sufficient objection to its use as an elementary treatise. Of course its abstruseness is not in itself a sufficient argument against any study; because this very characteristic may make it valuable as an educational instrument, by exercising and giving full play to certain powers of the mind; yet it never can be right to present a subject to a young beginner's mind in a hard form, when it is capable of being put before him in a more easy one. Such a course defeats its own object, by making that repulsive which may be made attractive, and by burdening and crushing, instead of strengthening and developing, the faculties. There

can be no reason, then, why all unnecessary difficulties should not be removed out of the way of beginners, and not be allowed to disgust them at their first entrance upon the subject. Granting that difficulties are necessary for the purpose of mental training, they would be supplied in sufficient abundance by Advanced Geometry, to which there would be ample time to proceed, if Euclid were once abandoned, and a text-book of Modern Geometry substituted in its stead.

To illustrate this point, let any one compare I. 5 of Euclid with the same proposition, as proved with equal rigour, in Wilson's,* and other text books of Modern Geometry; let him then remember the torture which he underwent, and which, if he be a teacher, he has seen others undergo when called upon at the very outset of their geometrical studies, with minds utterly unversed in geometrical ideas, to face the formidable difficulties and complications, which have earned for it the title so well known to school boys; and he can hardly fail to realise the force of this objection.

(3.) As a matter of fact, in the majority of cases, boys who have learned Euclid have not learned Geometry from it. They may quite understand the course of reasoning,—they may comprehend the data and the process by which the conclusion is drawn from them,—they may be able to repeat accurately and intelligently all the propositions, and to write them out neatly and clearly, and yet they have acquired but a limited stock of geometrical ideas; they are but, as it were, on the outskirts of a wide field of knowledge, they have but a feeble grasp of geometrical principles, and little or no skill in applying them. And yet in other branches of mathematics, these same boys shew an intelligent acquaintance with principles, and much expertness and readiness in their application. I am only giving utterance to a conviction, formed

* *Elementary Geometry*, p. 21.

after many years' experience as a mathematical teacher, and as a head master watching the results of mathematical teaching in others, when I say that boys fail to acquire from the study of Euclid any adequate idea of Geometry. This conviction is shared by others. Thus Mr. Wilson says,* "as every one knows, boys may have worked at Euclid for years, and may yet know next to nothing of Geometry"; and again, to the same effect, Mr. G. Griffith,† "many of the boys, who have read six books of Euclid, really know nothing at all about Geometry; they do not understand the simplest elements of it." Upon this point I believe there would be a singular unanimity of opinion on the part of all good teachers.‡ To any earnest-minded master it cannot but be most unsatisfactory to know that his pupils, while laboriously mastering their text-book, are yet of the subject itself acquiring only a very slight and superficial knowledge. To say that there must be something wrong in such a case is to utter the merest truism.

(4.) This ignorance of Geometry is especially shewn in the fact, that boys who know Euclid thoroughly, fail, for the most part, in original work. The experience of other schoolmasters will, I feel sure, bear me out in this statement. We must all know intelligent boys, who understand and can repeat Euclid perfectly, and yet have acquired little, or no, power of dealing with problems and unseen questions. Let any one who has been in the habit of examining boys in Geometry recall his experience. I have frequently examined those who have been learning Euclid for years, and found

* *Elementary Geometry*, Preface p. ix.

† *Report of Schools Inquiry Commission*, vol. iv. p. 177.

‡ Cf. J. M. Wilson's paper on *Euclid as a Text-book of Elementary Geometry*.—"On this point masters are almost unanimous in asserting that few boys see through Euclid to the geometry that underlies it. I have great concurrence of testimony on this point. One eminent and successful master says that most boys learn no geometry from Euclid."—*Educational Times*, Sept. 1st, 1868, p. 127.

them unable to attempt the simplest question or deduction outside of their text-book. In these cases I have had no reason to doubt the capacity, or energy, of the master,—as indeed I have sometimes had occasion to do, when I have found boys, who have been learning for months, unable to write out correctly and intelligently the simplest proposition,—because I have observed, perhaps, in other subjects their pupils to have been well taught and trained. This testimony is confirmed by that of Mr. Wilson,* “Everybody recollects how unavailable for problems a boy’s knowledge of Euclid generally is”: and again, in the paper† before quoted in these pages, “every one who has examined men or boys knows that no deduction, however easy, can be set which shall be even rationally attempted by all the examinees. I examine scores of boys of fourteen and fifteen, at our entrance examinations, and the answers show a kind of ludicrous inappropriateness, indicating that the two or three Books of Euclid, toiled through, have given no notion either of a proof of a theorem, or of a solution of a problem.” ‡

And yet all mathematicians would agree, that though to reproduce book-work accurately may be of value, yet the true test of mathematical knowledge is the ability to apply it to original questions; if this power has not been gained, no real mastery of the subject has been acquired. We certainly should not be satisfied with this state of things in other branches of exact or experimental science; if a boy, after spending four or five years on Algebra, or Trigonometry, or Chemistry, knew nothing but the matter of the text-book he

* *Elementary Geometry*, Preface, p. x.

† *Educational Times*, Sept. 1st, 1868, p. 127.

‡ Since writing the above, I have seen a further confirmation of this view in the Report of the Dean of the College of Preceptors, recorded in the *Educational Times*, for Feb., 1870.—“Few, however, even attempted the one or two very simple problems or riders given in addition to Euclid’s propositions.”

had been studying,—and even then had but an inadequate view of the subject, and but little aptitude for applying its principles to the working out of unseen questions within the range of his knowledge,—we should think the result unsatisfactory. And yet that this is very largely the case with students of Euclid it is hardly possible to deny. There must be a fundamental defect somewhere.

But it may be said, in answer to this objection, there is a fault here undoubtedly,—but it rests in the teacher, not in the book. In some cases it may be so; in many, nay in most, it is not so. We are not all bad teachers; those of us who are good teachers of Analysis, are not likely to be bad teachers of Geometry; and yet many, who are highly successful in the former capacity, comparatively fail in the latter. The results of our work in this respect are generally, almost universally, more or less unsatisfactory. Where is the fault? Now for successful progress in any study, two conditions, external to the student, are necessary—a good teacher, and a good text book. A bad teacher will diminish and mar the influence of a good text book; and assuredly a bad text-book will weaken, and, to some extent, nullify the efforts of a good teacher. Efficient instruction may supplement the deficiencies of the book, but cannot make up for them altogether. Now where the fault lies in this case we have no manner of doubt. Even if the teacher be bad, the book, in a great measure, makes him so. No one can be thoroughly successful in his geometrical teaching, with Euclid as the basis of his instruction. The book itself is enough to paralyse the efforts of any teacher. There is nothing in it to suggest the application of its principles to new questions, no salient points indicative of similar ones not discussed, no order leading on naturally from what is proved to what has not been, but may be, proved. The very form in which the book is cast, added to the utter absence of any

reason for taking any particular steps, or following any particular arrangement, naturally leads both master and pupils to the idea, that the great thing required is to "get up" accurately, and "say" the propositions; and this task is so arduous and absorbing, that nearly all the master's and pupils' attention must necessarily be devoted to this point alone.

(5.) This last observation supplies the key to the explanation of the two preceding defects. The mastering of the text of Euclid takes up so much of the time that can be fairly allotted to Geometry, that but little is left for acquiring a more general knowledge of the subject than the book itself supplies, and for original work. The time now spent in mastering Euclid would suffice, if devoted to a modern treatise, for covering much more than his ground in Elementary Geometry, for learning a great deal of Advanced Geometry, Geometrical Conics, and acquiring, at least, an insight into Newton's *Principia*; and would leave an ample residuum for problems, deductions, and general geometrical questions.

Against this it may be urged,—as indeed it has been,—“time is an essential element in education; you must not be in a hurry; it is no argument against any study, that it occupies time.” But surely there can be no reason for spending on any branch of study more time than it absolutely needs; if a boy could learn the same amount of Geometry in a shorter period, and not suffer in respect of mental discipline, or otherwise, no one in his senses, one would think, would say he ought not to do so.

The truth is, that in education at present it is absolutely necessary to economise time. The number of subjects which it is requisite for boys to study is so great, that an injurious strain has to be put upon them; and just complaints are being made, that we are overburdening our pupils with a multiplicity of studies. It is no use to say, then why not

diminish the number, teach fewer, and try to teach them well? No doubt this would be best. But the pressure of public opinion, urging this variety of subjects upon us, now requiring the introduction of one new subject, and now of another,—the exigencies of civilised life in our age,—above all, the crushing requirements of the various examinations, for one or other of which our pupils have to be prepared, oblige us to do what our better judgment tells us ought not to be done. With our education already borne down in this respect, there seems to be but one alternative, and that is, to see whether any of the old subjects cannot be better taught in a shorter time, and with a less expenditure of mental force on the part of the student, by our simplifying them as much as possible, and improving, where we can, our methods of conveying their elementary truths. Unless this can be done, it may fairly be predicted, that our present system of education will break down; or, what comes to the same thing, our students will break down under it.

The general result of all this is, that while in other branches of education we are on a level with other nations, in Geometry alone we are decidedly inferior. I know this fact is denied; but in such a matter it is well to see ourselves as others see us. Mr. M. Arnold, who had ample opportunities of collecting the opinion of foreigners upon this point, thus expresses the general tenour of what he heard: * “In general, the respect professed in France for the mathematical and scientific teaching of our secondary schools is as low as that professed for our classical teaching is high. . . . I must not forget to add, that our geometry teaching was in foreign eyes sufficiently condemned when it was said that we still used *Euclid*. One of the great sins of Cambridge was her retention of *Euclid*. I am bound to say that the Germans

* *Report of the Schools Inquiry Commission*, vol. vi., p. 506.

and the Swiss entirely agreed with the French on this point. *Euclid*, they all said, was quite out of date, and was a thoroughly unfit text-book to teach geometry from. . . . The foreign *consensus* against the use of *Euclid* is something striking." Now this testimony seems to establish these two points: first, that we are inferior to other nations in our geometrical teaching; and secondly, that that inferiority is due to the use of *Euclid*. It is all very well to say that this deficiency on our part is only "proved by French witnesses;"* that the testimony, in short, is foreign, and therefore to be suspected. Any evidence under the circumstances to be worth anything must be foreign, for we cannot be expected to give impartial testimony in our own case; at all events, others are more likely to be unprejudiced witnesses than we can possibly be. That this particular evidence is not altogether prejudiced is shewn by the fact, that while they condemn our mathematical, they recognise our superiority in classical, teaching.

But it is asserted in reply to all this,—though *Euclid* be open to all these charges; though it fail to teach Geometry, yet it supplies an admirable mental discipline, and in particular trains the mind to close, accurate, and consecutive reasoning. This may be all very true; but there can be no reason to doubt, that modern text-books of Geometry would train the reasoning faculties, and develop the general intelligence, equally well. The example of other nations would seem conclusive upon this point. We have no ground for believing that the Germans, French, Italians, and our brethren across the Atlantic, are in the power of precise and vigorous reasoning, and in general intelligence, inferior to ourselves. Indeed, the wider knowledge of the subject,—and the consequent greater insight into geometrical truth,

* *Athenæum*, August 22nd, 1868.

and enlarged acquaintance with exact reasoning in different forms,—which would be acquired from a modern text-book, must, to some extent, involve a proportionately more extensive discipline of the reason, and a corresponding augmentation of its power.

The truth is, that a good deal of nonsense is talked on this point; the acquisition of knowledge and mental training are rather separable in idea, than in fact. It is a mistake to suppose that the latter can be attained without the former; our aim should be so to conduct the process of the acquisition as to secure the training. In general, where the knowledge is worth acquiring, the discipline is in direct proportion to the knowledge acquired. So then, when it is suggested that the object in teaching Euclid is not to make men geometricians, but clear, cautious, and powerful reasoners, such a notion must be received with limitation. This may be, indeed, our primary object; but if, besides accomplishing this, the other purpose is attained as well, something more valuable has been effected. It must be better, one would think, to gain the mental discipline, *plus* a larger store of knowledge, than to secure the former with only the minimum of the latter.*

Again, even if we granted that Euclid by itself supplied a better discipline of the mind than any modern text-book, even with the increase of geometrical knowledge which the use of the latter implies, yet it can hardly be asserted, that it would be as effective in this respect as the modern treatise, together with the much larger amount of original work which, as we have already seen, there would be time to undertake, if Euclid were abandoned. By original work

Professor Hirst's *Preface to Wright's Elements of Geometry*, p. viii. "We should seek as much as possible to combine intellectual discipline with effective advancement in knowledge, rather than continue striving to secure that discipline by exercises of a purely artificial and gymnastic kind."

logical power, and the faculty of close, accurate, consecutive reasoning, would be more effectively cultivated, than by the perpetual effort to comprehend, and exactly reproduce, the reasoning, however perfect, of another; while the faculties for originating ideas, the judgment, and to some extent even the imagination, would be called into active play.

It is further and gravely urged, that Euclid is "a better thinking ground" because of its very imperfections;* they supply something to "reason against" and to "remedy;" they engender cautiousness; and, in short, it cures the student of a "hasty habit, if he be properly exercised in the very field of danger—a student trained in accuracy without ever hearing of falsehood is a drilled soldier who has never been under fire."† To carry on the metaphor, it must be remembered that the soldier is drilled on the parade ground, and not on the battle field; and if from this "field of danger" some come out unscathed and victorious, many are wounded, or fall to rise no more. May it not be so with the intellect trained under such hazardous circumstances? Dropping metaphor, we may safely say, that it is dangerous to throw undue difficulties in the way of immature, undeveloped minds. Intellectual discipline is best secured by the gradual exercise of the faculties on matter suitable to their growing, but not yet full grown, powers; they are enfeebled, often crushed, or never exercised at all, by being overburdened in their first efforts. The reasoning powers are much better developed by clearly grasping at each step the force of the premises, and the connection between them and the conclusion, than by taking for granted without under-

* *Athenæum*, July 18th, 1868, p. 71. "So splendid and so unique an exhibition of human greatness and weakness mingled would, with proper advice as to correction, be a better thinking ground than concinnate perfection, in which the learner is kept out of the way of imperfection, instead of being introduced to it to the reasons against it, and to the remedy."

† *Ibid.*, p. 72.

standing them, as young beginners often must do, the different processes by which Euclid works out his results. No doubt the mental faculties, for their due expansion, must encounter difficulties; but these should be at each stage of their development proportionate to their strength. A man can bear a burden, which would overweight and crush a child; give the child a weight to carry, adequate to its physical powers, and those powers are gradually strengthened. It is important, then, that the text-book, certainly at first, should not present difficulties, disproportionate to the average student's capacities, and a course of reasoning which he can hardly grasp.

It may seem like heresy to say so, but it is at least questionable, whether the study of Euclid is such an excellent training for the reason. The type is not so perfect. True, his argument is ever faultless, inflexible, incapable of reply; but it is conveyed with an unnecessary prolixity and verbosity, and with a stiffness of form, which we certainly never find in other scientific reasoning, or in that of common life. Reasoning after Euclid's fashion would be something like dancing in armour, or on stilts; it would be very wonderful as a performance, like that of an acrobat; it may give an unnatural strength to certain limbs and muscles, but it would not tend to the general development and health of the whole frame; it would be hardly graceful, or worthy of imitation; and after all it would be more useful to learn to walk steadily and without stumbling. Teach a boy to reason by all means, but teach him to do so naturally and simply; and do not force his reasoning into a set and artificial form, which as a matter of fact it would never, if freely exercised, take. In the culture of this, as in that of all our other faculties, the great object should be to be natural, and not constrained and artificial.

But it is suggested, that the study of Euclid is a good

mental discipline, because it is useful to have "one branch of study, in which the consequences are evolved from the smallest possible assumption of premises."* This we have seen to be a defect of Euclid; here it is assumed as a positive merit. Now as a matter of fact in scientific matters generally, and in common life, we seldom if ever try to reason from "the smallest possible assumption of premises." On the contrary, we are wont to draw our premises from all quarters; to assume our *common notions* freely, wherever we find them established and admitted; and then to deduce our conclusions. So this merit, or defect, — call it which you will, — of Euclid, does not make it a good type of reasoning for any purpose in life.

The truth is, that our teaching of Geometry through Euclid "appeals more to the memory than to the intelligence of the pupil."† It involves very little more than a mere recitation of certain constructions, data, and conclusions; even when the whole process of the argument in each case is thoroughly understood, the memory is exercised rather than the understanding. It is just a question, whether the perpetual "saying" of propositions does not enfeeble, rather than invigorate, — stunt rather than expand, — the reason; it seems almost certain, that it has a tendency, as has just above been suggested, to force that faculty into a distorted form, rather than encourage its natural and full development. This is a heavy indictment to bring against any study; but that the study of Euclid has this effect in numerous instances we are strongly inclined to believe.

At all events, the constant repetition of propositions, with little or no original application of them, can hardly fail to crush originality, and make the mind reason in a groove,

* *Athenæum*, Aug 22nd, 1868.

† MM. Demogeot and Montucci, *Report on English Education*, quoted in preface to Wilson's *Elementary Geometry*, p. ix.

rather than of its own impulse and independently. And this is just the great defect of so many cultivated minds, that they are ever thus running in a groove; able to master thoroughly and reproduce accurately facts, or the conceptions of others, but unable to originate ideas, or work freely in the great world of thought and knowledge. To it is owing the circumstance that works of genius are so often produced by men, who have not been subject, or have refused to blindly submit themselves, to the course of culture marked out by our Universities and Schools. The evil here referred to is on the increase. Men, under the baneful influence of competitive examinations, are becoming less and less original. That the study of Euclid has to some extent contributed to this injurious result is more than probable.

Let not our meaning be mistaken. We do not undervalue geometrical studies; on the contrary, we regard them as the best possible discipline of the reasoning faculties. Our quarrel is with Euclid, as a text-book of Geometry, — not with Geometry itself. We would have this study maintained, and even extended, as we would have classical studies upheld, as together forming the basis of liberal education. But, as in the latter case we should like to see an improvement in our methods of teaching and in our text-books, so we wish for the same in the former. That the results in the way of intellectual discipline from Geometry, thus studied on a better system, would be far more satisfactory than they are at present, we have no doubt whatever.

It must not be forgotten that the arguments in this case are cumulative; some may be weaker, some stronger; but their force as a whole can hardly be resisted,—indeed is sufficient to sink any book not sustained by the prejudice engendered by long usage and undisturbed possession of the educational field. For it cannot be allowed, as some assert, that all the alleged defects can be easily remedied; some of

them certainly are fundamental, and strike at the very root of the science. Nor can it be acknowledged, that the merits of the book are such as to countervail all its faults; until at least it can be shewn that no system of expounding the elements of Geometry, less defective, and equally or more meritorious, is possible. Until this be done, we are bound to believe that Euclid keeps its ground from force of custom,—in short from prejudice,—and nothing else.

This leads up to the consideration of the last branch of our subject, viz. the question of modern text-books of Geometry. The allegations against them are numerous, and made in such respectable quarters, that they deserve notice.

(1.) It is asserted, that none of the proposed substitutes for Euclid are quite satisfactory. This is very probable, as our geometrical teachers have been trained in Euclid, and have as yet had little or no experience in teaching any other book. We may observe, however, that to ignore all the new text-books which have been written is certainly not the way to secure a satisfactory one at last.

(2.) In confirmation of this assertion it is further said, that the modern text-books are *more* faulty than Euclid. We are not merely meeting assertion with assertion, when we express our conviction that they are *less* faulty. In reviewing Mr. Wilson's *Elementary Geometry*, the *Athenæum* reviewer shews every disposition to find out all the defects in the book he can. Let any one fairly compare these with the long list of faults in Euclid, so ably collected together by Professor De Morgan in the *Companion to the British Almanack* of 1849, of which we have in these pages made frequent use; or with the statement of the reviewer himself, that the *Elements* “swarm with faults; here an omission, there a redundancy; here an obscurity, there an overlaboured clearness; here a logical superfluity, there an

illogical shortcoming*"; and he will not, one would think, hesitate to conclude that the balance of adverse testimony is decidedly in favour of the modern, and against the ancient author. For ourselves, we have no hesitation in expressing our conviction, that though the modern text-books contain defects, yet that they are not as numerous as those of Euclid; that they are not as radical and inherent in their system and methods as his, and therefore are more remediable and more easily corrected; and, lastly, that from the study of them with their defects a wider knowledge of Geometry, and ultimately a better mental discipline, would be derived, than can possibly be acquired from the study of the older treatise.

(3.) In particular, an objection is raised against the system of modern treatises of Geometry, on the score of "its extent of preliminary assumption"†; and special exception is taken to the plan of introducing postulates wherever they are wanted, and thus leaving the student without any collective foundation for his geometrical reasoning; and it has been even suggested that this may be for the purpose of concealing trickery. Now it may be observed in reply to this, that such an objection comes with a bad grace from the advocates of Euclid, because this is just the license of which Euclid avails himself largely; and in his case the offence, if it be an offence, is worse, because he *does* make a profession of formally stating all his postulates at the commencement; and therefore any assumption afterwards introduced is made unawares. It has been well said, that "nothing should be tacitly assumed by those, who will not assume without express statement, that 'two straight lines cannot enclose a space.'"[‡] And yet, as the same distinguished writer immediately afterwards shews, I. 1 and I. 22 demand

* *Athenæum*, July 18th, 1868, p. 71.

† *Ibid.*, Aug. 22nd, 1868.

‡ *Companion to British Almanack*, 1849, p. 6.

two postulates to prove that the circles will intersect, viz. "if two figures which have one or more points in common have each a point which is not in the other, the boundaries of those figures must cut;" and, "every point is within or without a circle, according as its distance from the centre is more or less than the radius." I. 4 assumes the postulate, "any figure may be removed from place to place without alteration of form, and a plane figure may be turned round on the plane"; without which "right to turn, I. 4 would not prove I. 5." In I. 12 two postulates are assumed, viz., "if one point be taken on each side of an indefinitely extended straight line, any line which joins the two must cut the straight line"; and, "if one point of a straight line be inside a figure, the straight line must, if sufficiently produced, cut the figure in two points at least." In I. 35 and I. 43 use is made of the postulate, "an area taken from an area leaves the same area, from whatever part it may be taken,"—a postulate "particularly important as the key to equality of non-rectilinear areas, which could not be cut into coincidence geometrically."* Euclid in Book III. frequently appeals to our experimental knowledge of the form of a circle; thus taking for granted what has been never formally and definitely stated. If modern treatises on Geometry, then, contain a great deal of preliminary assumption, Euclid is shewn, and that too mainly on the evidence of one who on the whole is a strong advocate in his favour, to be by no means free from the charge.

But it is quite open to argue that this practice is unobjectionable. There can, it may be justly urged, be no reason why all postulates and axioms, necessary for the matter in hand, should not be at once assumed, whenever they are needed; provided only that they be such as commend themselves to the common sense and experience of mankind, be

* *Ibid.*, p. 8.

judiciously chosen, and be *distinctly stated* before they are used. It may be further urged, that it is better to introduce them just when they are required, than to state them altogether at the beginning, and so burden the memory of the student, at his first introduction to the science, with a mass of matter of which he does not then understand the use.

The requirements of a good text-book would seem to be these: that all necessary particulars and axioms should be freely assumed, where needed, subject to the above-mentioned conditions; that the proof should in each case be given in the most simple and direct form, consistent with logical precision and perfection of reasoning, passing from what is more obvious to what is less so, or what, prior to proof, is not certain at all, the consequences flowing easily and naturally from the premises. Whether the reasoning need in every case be drawn out with verbal fulness is questionable; if the principles are fairly assumed, the data accurately laid down, and the conclusion rightly drawn and stated, the mind may often well be left to perceive the connection, without the necessity of adhering to any set formula of statement. It is in the fact, that modern authors have made a much nearer approximation to the fulfilment of these conditions than Euclid has, that their superiority lies.

(4.) Another objection to the use of modern text-books is, that their number and variety would create a difficulty. We do not find this in the case of Algebra, Trigonometry, and other mathematical or scientific subjects, in which the manuals must differ more, because the principles are not so fixed. Why should it exist, then, in the case of Geometry alone? As a matter of fact, too, no such difficulty is experienced on the Continent. I suppose the objection has reference principally to examinations. If so, it must be remembered,—a fact too much forgotten in the present day,—that students do not exist for the sake of examinations,

but examinations for the sake of students. Further, it is more than probable, that the diversity of text-books would tend to improve the teaching of the subject: because each would present it in different aspects, with different degrees of elegance, and with variation in the development of doctrines; and because each would have its own special merits, and if it had also its own special defects, would yet be free from those peculiar to others. And so the teacher would acquire a wider and clearer view of the subject as a whole, and obtain a firmer and more accurate grasp of its principles and processes; and breadth and clearness of view, and certainty and tenacity of grasp, are essential elements in all good teaching.

From the use of modern text-books these two advantages would accrue:

(1.) The study of Geometry could be commenced at a much earlier age. Whatever, then, may be the mental habits, *e.g.*, accuracy of thought, closeness and precision of reasoning, &c., which the study of Geometry fosters, they would be sooner formed, and the result would be proportionately favourable to mental discipline.

(2.) A larger knowledge of Geometry would be acquired,—for the ground of Euclid, and much more, would be covered in far less space and time. There would be room for the study of Advanced Geometry, of which boys now for the most part learn nothing, but which is introduced in France into books, not exceeding Euclid in size, and which could be mastered probably in much less time. This advantage has been before referred to, but is so considerable as to deserve recapitulation in this place.

It may be asked, then, why continue to use a book which is faulty, when better ones for the purpose are to be had? The answer is, because we schoolmasters cannot help ourselves. As long as the Universities, the Civil Service Com-

mission, the Military Education Board, the Committee of Council on Education, and other examining bodies retain Euclid, we have no alternative. Our pupils must be taught it, or else have their success imperilled, or rendered impossible, in examinations upon success in which all their future prospects,—not to say, what is of much less importance, the credit of their schools,—depend. But it has been suggested by some who appreciate the force of this point, and yet feel that something must be done,—use two text-books, Euclid and a modern one.* This may perhaps be better than adhering to Euclid alone; but then it would distract the attention, and perhaps confuse the notions, of young students; and even if it were otherwise desirable, time, which is already insufficient for the thorough mastery of the one book, would certainly not suffice for that of the two. This is one of those cases where the Universities, which ought to lead, rather retard the educational progress of the country, and suffer improvements too often to be forced upon them from without, instead of their being the results of spontaneous movements from within.

A few practical suggestions may be thought worthy of attention.

1. That schoolmasters, and all others interested in the matter, should combine to petition the Universities, and other leading examining bodies, to set Geometry, or certain branches thereof, as the subject of examination, and not Euclid, or so many books of it; leaving the students to get up their work either from Euclid, or some modern treatise, at the discretion of their respective teachers. This, I believe, Oxford and London already, to some extent at least, allow.

* This doubtful experiment the author is now trying in one class of the school under his charge.

Cambridge, strange to say, still hesitates to follow the good example.

2. That a number of men, comprising eminent mathematicians and experienced schoolmasters, should combine together to compose an elementary treatise, fixing in concert the first principles of the science, and settling the general course to be taken, and then leaving it to one or more of their number to do the whole work, or assigning portions of it to different individuals—reviewing it when roughly completed, revising, amending, and perfecting. This would obviate the objection, which after all we have seen to be worth little, as to the want of uniformity in text-books, if Euclid were given up. That the committee of eminent men already appointed by the British Association, or that one to be appointed by some one of the Universities singly, or all of them conjointly, may undertake this work, is much to be desired.

3. That, until this be done, we should use one of the existing modern text-books, whichever we may respectively think best. These, though necessarily not yet perfect, possess considerable merit, and would certainly, if only a portion of the objections against Euclid be tenable, prove excellent substitutes for that time-honoured but antiquated treatise. Until we get something better, we should be glad to see one or more of these recognised publicly by some competent authority. Oxford, or Cambridge, may be induced perhaps to put its *imprimatur* upon one of them for a time.

4. That those engaged in mathematical teaching, who may be best qualified, should carefully note down their experience, and communicate what may seem to be valuable to those who have composed, or may be engaged in composing, geometrical text-books, with a view to assist them in the revision, or composition, respectively of their works, and so making them as complete, and as suitable for their purpose, as possible.

It must not be forgotten that the practical difficulty in the way of producing a good text-book must be at first considerable, from our want of experience in the use of any other book than Euclid. For though we may derive assistance in this way from France and Germany, yet we are necessarily hampered by our old traditions. And again, what is suitable to the education of one country is not always so adapted to that of another, where the national characteristics and requirements, the type of intellect, and the educational methods differ, as ours do from those of the continental nations.

This question is no longer to be trifled with. The convictions of those engaged in education are becoming too strong and decided to admit of prolonged delay. Some alteration in this matter must speedily take place; it may be made sooner or later, but be made it must. Those of us who are in earnest cannot allow generation after generation of our pupils to suffer, while people are making up their mind upon a question which can, and ought to, be decided at once. Not only those of us occupied in the actual work of education, but also those who are in any way interested in it, should combine their influence, and concentrate their efforts, for the purpose of substituting for Euclid a better text-book, written on modern principles. Though of course all the prejudices of our early education and of our past experience are in favour of Euclid, we are forced, however reluctantly, to the conviction, that it must be given up: and by an accumulated weight of argument we are obliged to believe, that there are but few, if any, educational reforms, which would be fraught with such beneficial results.

SEVENTH ORDINARY MEETING.

ROYAL INSTITUTION, 24th January, 1870.

JOHN BIRKBECK NEVINS, M.D., PRESIDENT, in the
Chair.

The Rev. Dr. Jones was unanimously elected a Corresponding Member, on the recommendation of the Council.

The Rev. W. H. Dallinger was unanimously elected an Ordinary Member.

The President called the attention of the Members to Dr. Tyndall's lecture "On Dust and Disease," as reported in *The Times* newspaper of the previous Saturday. The subject gave rise to considerable discussion.

The following paper was then read :

ON THE FEUDAL POSSESSIONS OF ENGLAND ON THE CONTINENT.

By JAMES BIRCHALL, Esq.

THE subject of this Paper is one of the most prominent topics in all ordinary manuals of English History, and occupies no inconsiderable space in the annals of most reigns during the thirteenth and fourteenth centuries. Yet it may be safely asserted that few ordinary readers of English History, or even students thereof, have any clear notion of the bearings of this important subject, and of the influence which the Feudal Possessions of England on the Continent exercised upon the national destinies, and upon the formation of the national character. For, as a student of history, I readily concur with Professor Huxley's views, that national character and political aptitude are after all not to be attributed entirely to race, or to ethnological diversities, but to other and far different influences.

It is with a nation as with the individual; both are born with certain proclivities inherent in, and natural to them; but it is their future history, the circumstances to which they are afterwards subjected, which mould and develop these tendencies, and ultimately frame them into those qualities,—virtues and vices,—which we style national peculiarities. It is beside the object of this Paper to enter more at large into this question; but, having mentioned it, I was unwilling to pass it by without remark, because it forms the main argument in a lecture recently delivered by the Professor (“On the Forefathers and Forerunners of the English People”), and will become one of the great controversies of the day. I had also a further reason in this, that I think

it will be within my power to show, in this Essay, that there is a strong overruling power at work in the history of a people, which in the course of events tends very considerably to alter and refashion their moral and political character, and that nearly always the entire future of a country depends upon how such and such an event turns; what present and immediate advantage a people takes of such and such a course of circumstances; and upon their ability to resent, or the necessity which compels them to submit to, such and such a course of treatment, at the hands of their rulers.

These observations will serve to foreshadow the method which I purpose to adopt with the subject in hand, which is to examine the relations which from time to time existed between the English monarchy and its French provinces, and to show how there sprung from these numerous opportunities, which our forefathers promptly and wisely used for the securing of their own present advantage, and the lasting benefit of their posterity.

By way of completing this introduction, I may be permitted to remark, that neither these nor any other provinces on the Continent were appended to England during the Saxon times. Our Saxon forefathers were, if I may so term them, the Japanese of their age; skilful like them in arts of delicate and curious workmanship; interfering with no other people's concerns, and jealous of the interference of others. Their character I fear will not bear too close an investigation, and has certainly not improved with the recent researches of ethnologists and antiquarians; but, if they sank into the slothful enjoyment of their possessions when once acquired, they plunged England into no foreign wars, and did not involve her in the intricacies of any Continental relations. The Normans, on the contrary, coming directly from the Continent, seized upon a new country without surrendering

the old. Their enterprise and ambition could not brook the limits of an island; and accordingly we date from the Norman Conquest the commencement, growth, and present development of our system of foreign diplomacy.

Like the first Hanoverian kings, the Norman sovereign of England was also a petty prince of the Continent, bound to a feudal superior. As in the later instance, so in the earlier, England was thrust into quarrels which in no degree affected her true interests, and practically reduced her into the mere appendage of a paltry Continental province. Since these disputes of the Norman kings were invariably prosecuted against their neighbours and superior lords, the Capets, it will be necessary for us, at the outset, to observe the political situation in France, about the time when one of her feudal chieftains became the Conquestor or Acquirer of the English crown.*

The empire founded by Charlemagne was gradually dismembered by the dissensions which continued among his descendants for the space of nearly a century after his death. It was during this turbulent interval that the Normans established themselves in Neustria; Brittany again became an independent state; the ancient kingdom of the Visigoths, situated between the Loire, the Rhone, and the Pyrenees, recovered its ancient sovereignty under the name of Aquitaine, or Guienne, and comprehended Poitou; while on the eastern side of the Rhone a new kingdom was formed, of Provence and the southern part of the ancient kingdom of the Burgundians. Within the space surrounded by these new states, that namely between the Loire, the Meuse, the Scheldt and the Breton frontier, was compressed the kingdom of the Franks, having for its eastern neighbours the counties of Flanders and Champagne, whose earls, as well as the dukes and princes of the before-mentioned states, acknowledged

* *Vide Map I*



the feudal sovereignty of Hugh Capet and his successors. Geographical France, therefore, was at this period a mere union of independent principalities, whose sole bond was the nominal one of feudal allegiance. This state of things will mainly account to us for the singular indifference with which Philip I., the king of France, beheld the aggrandisement of his feudatory, the Duke of Normandy. Consisting as Europe then did of a number of unstable and constantly varying powers, which were engaged in incessant petty wars with each other, and were not bound together by any common interest, it was impossible that any system of statesmanship could be developed for their mutual benefit.

The ruling families intermarried, but their alliances were productive of no political union; great victories were for the most part barren of results, and at the best produced little more than the transient superiority of the conqueror, or the temporary extension of his frontiers. But when the conquest of a new realm, in so bold and commanding a position as that of England, began to display its full effects, by conferring upon its rulers a preponderating influence in the west of Europe, the kings of France awoke from their lethargy, and there ensued a systematic rivalry between the two monarchies which was maintained almost without intermission for the space of three hundred and fifty years. The history of this long continued contest is the history of the feudal possessions of England on the Continent—the kings of France, on the one hand, struggling to dispossess their overgrown vassal of his continental provinces; and the English sovereigns, on the other hand, persistent in their attempts to consolidate them and enlarge their borders.

The contest, at first, was only for the retention of a mere province; but the wars widened, through various fluctuations, to such an extent, that all Europe became involved in them, the prize being nothing less than the crown of France itself.

At one time, by a strange concurrence of circumstances, two-thirds of the entire French territory acknowledged the sway of the English sovereign, and, as Macaulay has expressed it, there appeared every prospect of the establishment of another Western Empire, which would extend from the Mediterranean to the Northern Seas and the ancient Ultima Thule.* But the conjuncture of a statesman sitting on the throne of France and a fool on that of England, suddenly dispelled this vision, and the coming empire collapsed into a petty province at the foot of the Pyrenees.

At another period, after long years of straitened frontiers, these Continental possessions once more expanded, and for the last time. An English sovereign became more than the mere claimant or pretender to the French crown; by one of the most signal victories recorded in the scroll of English fame, he wrested the sovereign power from the hands of its imbecile possessor, and wielded authority as regent; his son was actually crowned, with all the ancient pomp and ceremony of the Capets, in their own cathedral shrine, and in the presence of their most potent feudatories. But, as in the former case, all this manifestation of conquest and possession was but an idle and vain-glorious pageant, and English dominion in France fell, never to rise again, before the mysterious influence of the Maid of Orleans.

Without, however, indulging further in these general views of the changes which affected English territory on the Continent, let us dwell for a brief while upon each of the important eras when these changes were most sensibly developed. These eras are five in number, and are represented by the maps which illustrate this Paper. In the second of these maps, we have exhibited the extent of the Duke of Normandy's dominions, when he added to them the crown and realm of England. Besides his own duchy, he

* *Vide* Map III.

held also in dependence the earldoms of Anjou and Maine. But the Norman kings of England soon found that the possession of these dominions on both sides the Channel was a source of constant danger, from the very ambiguity of their position. Powerful and independent sovereigns in the island, they were the jealously watched vassals of a feudal lord on the continent. Their most formidable subjects were the possessors of fiefs and castles in both countries, so that the leaders of revolt in England were always able to escape, in the event of failure, to their fortresses in Normandy, whence they defied their sovereign from beneath the protecting shields of the kings of France. In addition to these evils of their position, the Norman kings had to contend against another, of far greater peril—dissensions in their own families. William the Conqueror nearly lost his life in the quarrel with his son Robert concerning the duchy of Normandy; the same Robert had a bitter warfare to maintain with his two brothers for the security of the same inheritance; and he ended a turbulent and ill-spent life in a dungeon, after a long captivity, solely because he was the envied possessor of the duchy which his brother coveted. It is a melancholy history, this of the early Norman kings, and of their parricidal and fratricidal wars; but the troubles which befel the first Plantagenet, on account of his foreign possessions, present a record far more humiliating. The accession of this sovereign (Henry II.) at one bound extended English dominion in France from the river Somme to the Pyrenæan frontiers of Navarre and Arragon. This sudden and wholesale aggrandisement of wealth and influence to the English crown was owing to the following circumstances. Louis VII. of France, more honourable than politic, set aside his wife, after a union of sixteen years, on the ground of her infidelity. The rejected lady was the duchess of Aquitaine; the heiress of dominions which comprehended a fourth of France. With

such immense attractions, so dazzling in fact as to conceal in their glare the dark stains upon her character, this divorced queen was pursued by all the needy princes in the neighbourhood. According to the fashion of that age, the majority of these suitors endeavoured to seize her hand by force ; but with her veteran experience of married life, combined with those accomplishments in the arts of intrigue which she had acquired in the Eastern Crusades, Eleanor was not a princess to become an easy prey, and she only fell at length into her captor's hands, because that captor was a degree more cunning and resolute than herself.

Thus it was that Henry, Earl of Anjou, afterwards the Second of England, brought to the English crown the cities and vineyards of the lovely land of the Troubadours. Such a marriage, however, being the consummation only of policy and ambition, could not prosper, and it bore the bitterest fruits. History records the existence of few families within whose bosoms there raged more mutual hatred than in the household of this unfortunate Plantagenet. And these Aquitanian dowries of his wife were at the bottom of all the wickedness. To disarm the jealousy of the French king, Henry made a show of ceding to his eldest son the earldoms of Maine and Anjou ; Richard, of the Lion Heart, the second son, was created Earl of Poitiers ; and Geoffrey, the third son was betrothed to the heiress of Brittany, and in her right ruled that ancient duchy. As we shall see more at large presently, the populations of these various provinces were of hostile races, whose sympathies co-operated with the rebellious tempers of Henry's sons, fomented by the malice of a jealous wife, "an Até stirring them to blood and strife ;" and all of these persistently disturbed by the king of France, a series of dark scenes of discord followed, whose counterpart can only be found in the most dismal times of the Carlovingian kings, or during the eras of the Western Emperors. Queen

Eleanor, the chief instigator of the troubles, was early arrested and imprisoned, as she was travelling to the French court in male disguise. But a more dangerous enemy remained at large, in the person of Bertrand de Born, the Troubadour, whose animosity and malice, as shown in these unhappy feuds, have secured for him an infamous remembrance in Dante's *Inferno*. He was constantly engaged, as the poet represents him, in counselling the children against the father, and then each against the other; never allowing them an instant's peace, but daily exciting them by his sirventes, or satirical songs. First he united all the races south of the Loire against the old king, and in favour of the three sons; then he endeavoured to expel Richard from his earldom, with the aid of his elder and younger brother. On this the father interfered, to befriend his overmatched son; on which a war succeeded, wherein the father and the second son contended against the eldest and the youngest sons. Historians who were eye-witnesses of these dreadful broils attributed them to all sorts of strange and unheard-of causes; and one of the sons even alleged that one of his maternal ancestors had been a witch, and exclaimed to his friends, "Is it to be wondered at, that, coming from such a source, we live ill one with the other? What comes from the devil must return to the devil." "It is the destiny of our family," said another of the sons, "not to love each other. That is our heritage, and none of us will ever renounce it." And to prove the reality of this fiendish resolution, he solicited his father to an interview of peace, and secretly ordered his bowmen to shoot at him during the conference. Judgments could not long remain suspended over such deliberate misdoings. The eldest son was seized with a sudden and fatal illness; the third son was trampled to death in a tournament; and the old king, driven to bay by his two surviving children, died of a broken heart, cursing the day of his birth

and the children he left behind him. All these calamities were, as I have stated, the offspring of that ill-starred marriage which placed Southern Gaul under the dominion of Henry II. Glorifying in the possession of so much power, Henry Plantagenet had placed his sons, in the character of satraps, to rule over nations who differed widely in race and manners and national sympathies. He sought to unite politically those whom nature had divided.

The immense extent of French dominion, over which Henry was thus the unhappy sovereign, was divided by the river Loire into two distinct parts. South of that river dwelt the people of the *Langue d'Oc*, inhabiting the most flourishing and civilised portion of Western Europe in the twelfth century. It was here that the feudal system, which held the rest of France in bondage, was unknown. The soil belonged to the body of the people; the duchies, countships, and lordships were all more or less national; no foreigner, as in both England and France, had usurped any power or dignity, and the municipalities and governments were in the enjoyment of their ancient privileges, as if they were Roman municipaliæ still. They were as free as their contemporary Free Cities in Northern Italy. Thus Southern Gaul, or Aquitaine, was, at the accession of the first Plantagenet to the English throne, the most ancient home of freedom in Europe; its literature, derived from the Romans and the Greeks, and enriched with an intimate communication with the Moors of Spain and Africa, was then the most polished, as its language, that of the Troubadours, was the most harmonious, in Europe; its laws, coming from the same source, formed a complete code: while its ports, originally founded by Greek colonies from Italy, had maintained the chief commerce of the Western Mediterranean for ages past. The land was thus filled with rich and populous cities, and its people, dwelling in plenty, were infused by their literature

with that spirit of chivalry and adventure which finally set all Europe in a blaze during the age of the Crusades. Freedom of action and of political thought naturally engendered in this high-souled people freedom of religious enquiry; and the earliest *protéstants* against the errors and usurpations of Rome were found among the Albigenses, who lived in the mountainous districts of Auvergne and Toulouse.

The other portion of Henry's dominions lay on the north side of the Loire. Here the people were quite distinct from those of the South, in language, laws, and habits. Whereas Aquitaine was the country of the *langue d' oc*, where *oc* meant yes; here the *langue d' oui* or *d' œil* prevailed, where *oui* or *œil* meant yes. Feudalism and serfdom were firmly established here; there were no popular institutions and no municipal rights. The Aquitanians were the descendants of the Roman Gauls, and included that remarkable people the Basques, who represented the most primitive inhabitants of the country. But these northern populations were of various extraction; they were Franks in the Isle of France, and Normans in Neustria, races who had dispossessed the Gauls, while in Brittany they were Celts, free amidst their mountains from the intrusions of the Teuton nations.

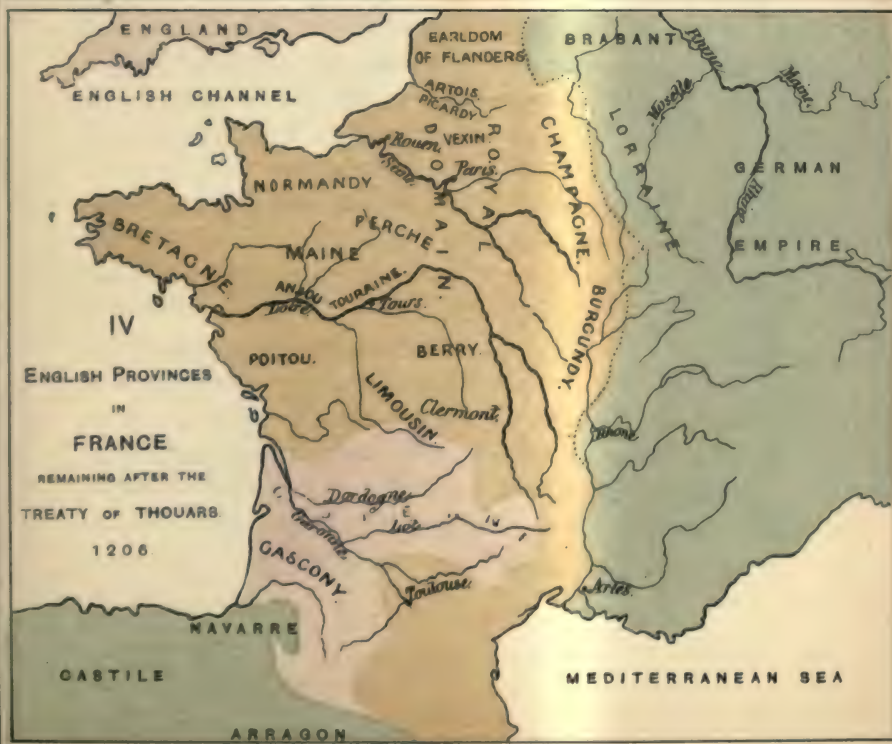
In neither of these two geographical divisions was the rule of the Anglo-Normans popular. A most remarkable instance of this is shown in the history of Arthur of Brittany. This prince, whose misfortunes have been immortalised by our national poet, was the posthumous son of Geoffrey, the third son of Henry Plantagenet. His mother was Constance, the heiress of Brittany. His Norman grandfather desired to give him a Norman name, but the Bretons insisted on his receiving the Celtic name of Arthur. The war which broke out between this prince and his uncle, concerning the title to the English crown, was marked by many circumstances which still further illustrate this fact. No sooner had Arthur

openly asserted his claim, than the people of Anjou, Maine, and Touraine, through hatred of the Norman king of England, allied themselves with Arthur; the people of Poitou presently joined them; and these confederates, being strengthened by the arms and policy of Philip Augustus, the reigning French monarch, the Norman crown of England was in a few years bereft of all its Continental provinces, save the duchy of Aquitaine.*

The results of this second war, between the Capets and their Plantagenet vassals, were of lasting importance to the two countries. The overthrow of Norman power on the continent enabled the French monarchs to avail themselves, without any dread of interference from England, of the crusade against the Albigenses. They thus acquired the sovereignty of Toulouse and Provence, the wealthiest and most civilised provinces in Southern Gaul; and the dominions bequeathed by Hugh Capet, formerly hemmed in by so many powerful feudatories, were now, after the lapse of three centuries, extended to the shores of the three seas. By a singular destiny, Aquitaine, which had been retained under Anglo-Norman dominion solely by the influence of the duchess Eleanor, and which had always borne the Norman yoke with impatience, continued faithful to the English crown, through hatred of the French, and the preference of its people for a master whose distance from them prevented his frequent interference in their concerns. This connection brought about some very important consequences in the progress of England. An active commerce sprang up between our Channel ports and the Basque provinces, and the opinions of the Albigenses, thus imported, had no small influence in contributing to the successful dissemination of Wycliffe's reformed doctrines.

Normandy, on the other hand, the mother country of the

* Compare Maps III. and IV.



kings and nobles of England, became entirely estranged from them. Similar in language and manners to their French neighbours, and having no communications with England, except with the Channel fisherman, who could not speak their tongue, the Normans soon learned to espouse with ardour the enmity of the French kings against England; and when Edward III. made his celebrated march through the duchy, he found that there was nothing in common between him and the inheritance of his ancestors.

More interesting to us, however, than all these, were the effects which this disruption of Norman-French dominions had upon the social and political progress of England. The authority of the crown, which under the Norman kings had become so absolute as to be dangerous to the liberties of the country, was so materially reduced by the loss of such considerable possessions, that henceforth no king could venture upon a foreign war without obtaining the requisite supplies from his parliament. In no single instance were these supplies granted, on any large scale, without an equivalent being wrung from the sovereign, in the surrender of some of those prerogatives which the Norman kings had from time to time appropriated to themselves, when the expression of their will was the only recognised law. All classes, after this, combined in their resistance to this sovereign power of the crown. In the Norman times, resistance to oppression had never assumed any other form than that of rebellion, and the despised English were persecuted equally by the king and the barons, their Norman oppressors. But now, the barons had no homes or estates, except those which remained to them in England; and instead of resenting the title of Englishman as an insult, they learned to regard it as an honour. This change of feeling drew them into closer relationship with the English, towards whom they had been gradually drifting for many years. Saxons and Normans at

length boasted in the same nationality ; and, their interests being concentrated under one monarchy, they united their efforts for the protection of the rights and the promotion of the welfare of all. The retention of Aquitaine contributed still further to secure these results. Owing to the defections among their own barons, both John and Henry III., his son, imported from thence numerous mercenaries, whose term of service was not bound by the restraints of the feudal laws, and who, being aliens, amidst a hostile people, were thereby compelled to keep faith with their only protector. These foreign legions were so freely enriched with lands and revenues, plundered from the rebellious barons, that there were imminent prospects at one time of a Gascon settlement in England. This exasperated the barons, who thereupon combined more closely with the middle classes for the expulsion of these foreigners from the realm. Magna Charta was the immediate fruit of these proceedings, in the reign of the first king ; to them we owe the foundation of the House of Commons, in the reign of the second king ; while the obstinate partiality of their successor Edward II. for his Gascon favourites led to the first enactment of that law which still holds good in England, that no foreigner shall hold any office of emolument or trust in these realms.

Such, then, were the vicissitudes by which the English possessions on the continent were reduced to a province, the inhabitants of which lived on the farthest borders of France, and had no feelings in common with their feudal lords. Henceforth the history of these possessions assumes a new aspect. The contests which they had hitherto entailed upon the sovereigns of the two countries had never become national in England ; English barons, because of their French relationships, were often found in the ranks of their sovereign's foes ; and the native English, in the earlier times, had joined in the wars for the sole purpose of revenging

themselves upon the countrymen of their oppressors. The wars between the French monarchs and the Norman and early Plantagenet kings were of a purely personal character, forced on by the fixed determination of the superior lord to cripple the power of a formidable and overgrown vassal; while, on the contrary, the wars which Edward III. and Henry V. waged for the recovery of their lost inheritances were entirely national, and were entered into by their subjects with an avidity which only the strongest passions can beget. The age was that of chivalry, when the thirst for military renown was the predominant feeling in every heart. All the youth of England were on fire; honour's thought reigned solely in the breast of every man; and needy knights sold their pastures that they might follow with horse and retinue the banners of their sovereign, the mirror of all Christian kings.* The prize which thus set the whole national mind in a ferment was, however, not the acquisition of a few provinces, but the conquest of a rich and powerful kingdom. Both Edward III. and Henry V. claimed the French crown, as of rightful inheritance; and the English, unable to perceive the mischief which would recoil upon themselves in the event of success, aided their monarchs to the utmost.

It is beyond my purpose here to narrate the well-known details of the wars of these two famous sovereigns, and their three great victories of Crecy, Poitiers, and Agincourt, which intoxicated the people, and impressed them with a belief in their own invincibility. But all this unexampled success ended in a complete change of fortune, chiefly in consequence of the intrinsic difficulty of preserving the acquisitions which had been made. Before the war, Edward possessed the duchy of Guienne, or Aquitaine, left by his forefathers; and he now added to it no more territory than

* Henry V. Act i. Scene 2.

the city of Calais and the surrounding districts, including the County of Ponthieu.* The throne of the Capets was still as far beyond his reach as the rainbow in the clouds; the reward of his brilliant victories was quite as unsubstantial, while they were succeeded by a series of misfortunes which closed the reign in dishonour, and left Calais the only real possession to be transmitted to his successor. The inhabitants of Guienne remained passive spectators throughout the war, for, with their traditional policy, they dreaded the approach of their absentee lord, should he conquer France, while the success of the French king was a source of equal danger to their independence. Of such little importance, however, had this province now become, that when Henry V. invaded France, its possession by either party was not considered worth an effort. At one time, in these second wars, there certainly appeared every prospect of the complete establishment of English dominion over France. France was wracked by dissensions in the royal family; by the turbulence of those princes who remained faithful to the crown; and, more than all, by the treason of the Duke of Burgundy, the most powerful of its feudatories. The youthful head of the House of Lancaster had wrung from the French parliament an acknowledgment of his title as regent and heir to the throne; he had been betrothed to the king's daughter, and the solemn conclusion of the treaty of Troyes promised the fullest security to the duration of his power. Never was the truth, that in the midst of life we are in death, more forcibly illustrated. Marriage festivities, peace demonstrations, anxious passing to and fro from realm to realm, family troubles and family rejoicings, the birth of an heir to three kingdoms, with its attendant shows and pageants befitting the advent of so great a prince;—all these circumstances marked the two eventful

* *Vide* Map V.



years which followed the glorious treaty. Yet, underneath all, secretly, silently, but nevertheless surely, was there an agent at work, which, at one blow, crumbled victor, victories, and all their accompanying trophies in the dust. The first and last English conqueror of the throne of France fell under the ravages of a mysterious disease, leaving an infant son, not yet a year old, to wield the sceptre of a dominion which embraced three distracted kingdoms. Need I lengthen the story further, and tell of the constant activity and persistent success of the rival French king, the wonderful deliverance of her country by Joan of Arc, and the last defeat of English soldiers in their ancient continental possessions, when the brave old earl Talbot was slain and overthrown in the battle of Chatillon, in Guienne. Nothing now remained but Calais, which, though retained by England for a century longer, never rose to importance, but stood as the solitary emblem and relic of all that Henry II. and Eleanor had inherited, and Edward III. and Henry V. had conquered. Yet not all; there remained the Channel Islands, and that other memento of disappointed ambition—the barren and absurd title which all our sovereigns, even to the Georges, retained with such strange obstinacy, and which is still printed at the head of the Dedication in our authorised translation of the Scriptures, “James, by the grace of God, King of Great Britain, *France*, and Ireland.”

Thus closed, happily for England, the second attempt of the Plantagenets to re-establish themselves on the soil of France. Had they been successful in their enterprise, this realm would have become a mere appendage to the crown of France, and a power would have been placed in the hands of our monarchs altogether irreconcilable to liberty. Free parliaments and equal taxation under popular restraint had been suppressed in France for many years, and, backed by the immense armies of mercenaries and the resources of their

continental dominions, the Plantagenets would speedily have reduced England to the same subjection. This impending evil was very early foreseen by our ancestors, who chafed at every prolonged absence of the sovereign, and whose jealousy of the crown's aggrandisement kept them ever on the watch, to guard their country against the probable loss of its independence. In 1421, the parliament petitioned the Duke of Gloucester, whom Henry V. had left guardian of England, that he would move the king and queen to return as speedily as might please them, in relief and comfort of the Commons; they further requested that their petitions might not be sent to the king beyond sea, but altogether determined "within this realm of England during this parliament;" and they desired that this ordinance might be of force in all future parliaments to be held in England. Although the guardian declined to accede to these petitions, the Commons were not thereby daunted, and they succeeded in renewing the statute which had been passed in the reign of Edward III., under the excitement of similar fears, and which declared that England was a free and independent realm, subject to no foreign control. While the parliament thus preserved their country in its integrity as a free state by their persistent assertions of its independence, their efforts were rewarded by one of the oldest and most important of our parliamentary privileges—that of their right to control all matters of peace and war, and direct the foreign relations of the realm. The constant hostilities into which the Continental provinces plunged the crown, impoverished the revenues derived from the royal domains, and compelled the sovereign to fall back upon his parliament for supplies; the loss of so many provinces at one blow, in the reign of king John, rendered these imperial necessities still more urgent, and we do not find any of the Plantagenet kings, after this, entering upon any war, or concluding any treaty of peace, without first taking the

advice and obtaining the concurrence of the estates of the realm.

Let us reflect here for a moment how narrowly our country escaped so great a degradation, at this crisis, as that of becoming the mere province of a second Empire of the West. Where would the liberties of England have been now, if the schemes of Edward III. and Henry V. had been accomplished, and they had founded a new imperial dynasty on the ancient throne of Charlemagne? Who shall say that England might not have been at this day in the position of Italy, for example, passing through the first ordeals of a newly-founded Constitutional government; or of France, still aspiring for liberty, but powerless to resist the strong hand which withholds it, and ripe for revolution as soon as that hand relaxes its grasp? These countries are only politically different from ours in this respect — that they are passing through those struggles for constitutional freedom, which we in England now survey across the landscape of centuries. For, virtues of blood and race notwithstanding, and all alleged peculiar aptitudes for political institutions, the progress of our national liberties, during the wars engendered by our continental possessions, was in constant danger, because the national mind was being regularly diverted to schemes of conquest, and the ever-increasing thirst for military renown, which they created. So thoroughly, in fact, had the warlike passion taken possession of the English nobles, that, when they were finally expelled from France, and the ancient fields of their glory had become the tombs of their fame, they were forced by habit and necessity to turn their arms one against the other, until, on the plains of Towton and Bosworth Field, and many as bloody a scene, their lust for the sword and the battle was extinguished only with their lives. But, as with our political institutions, so was it with the national mind; the passions which threatened to convert the English into a

nation of warriors were overruled for good, and, under the influence of our free constitution, were developed into those lofty faculties which have shed such a lustre around the victories of Edward and Henry.

There is *some* soul of goodness in things evil,
Would men observingly distil it out.

Where is the English heart that does not even now throb with pride, when the story of Cressy is recounted, of

. "Edward, the Black Prince,
Who, on the French ground, played a tragedy,
Making defeat on the full power of France,
Whiles his most mighty father, on a hill,
Stood smiling to behold his lion's whelp
Forage in blood of French nobility.
O, noble English, that could entertain
With half their forces the full pride of France,
And let another half stand laughing by,
All out of work, and cold for action!"*

Or, when the eve of the battle of Agincourt rises in his memory, and he sees those twelve thousand "poor condemned English, like sacrifices, by their watchful fires sit patiently, and inly ruminate the morning's danger," when they have resolved to encounter eight times their number of the chivalry of France, and to conquer or die?

All this unconquerable resolution, this tenacity of purpose, this thirst for deeds of high daring and noble enterprise, was, however, engaged in the cause of folly and wickedness; for it is certain that no wars were ever more unjustifiable than those which Edward III. and Henry V. waged against France. Had these great qualities been devoted to the good of mankind, to the extension of commerce by the discovery of new lands, or to the advancement of social and material welfare at home, we can hardly exaggerate the benefits which would have accrued to the country, nor place a limit upon

* Henry V. Act i. Scene 2.

the evils which, suffering in consequence, she might have escaped. National sins most surely beget national troubles ; and the genius of every nation, which is not developed in its legitimate channel, will become a curse and not a blessing. "All they that take the sword shall perish with the sword."

It was well for England that those who controlled her destinies, after the loss of all her conquests, so very early perceived the folly of which her sovereigns had been guilty. Henry VIII. would again have inspired her with prospects of French conquest, and for a short time thought to gratify the waning passion by the capture of Boulogne. Nay, even the politic Elizabeth was elated with pride at her temporary occupation of Havre, after the loss of Calais ; and the sagacious Cromwell, considered it a glorious achievement to have planted the foot of England once more upon the Continent, by the surrender of Dunkirk to English rule. But a council of English statesmen, in the reign of the second Henry Tudor, wiser in their collective capacity than all these, distinctly foresaw the true path of honour and profit for English daring and enterprise. This council, among whom was Lord Herbert, who relates the fact, passed a remarkable resolution, expressing their opinion that the sea, and not the Continent, was the true sphere of English exploits ; and that Providence, having given our island an extensive seaboard, innumerable ports, a commanding maritime situation, and a high spirited people panting for achievements, the discovery of unknown lands, the establishment of colonies, and the expansion of commerce were projects which would bring wealth to her shores, and profit and honour to her citizens ; and that it was the monarch's duty to encourage these as much as lay in his power. This sage advice was given at a time so opportune, that its worth was increased a thousand fold. Maritime discoveries had been made of such grand extent, that Europe, in a delirium of

wonder, asserted the existence of a New World far outstripping the Old in riches and magnitude; and Englishmen, as eager now for the front as at Poitiers and Agincourt, bent sail and oar in the race across the Atlantic. Visions of conquest in France, now long dispelled, were thus replaced with dreams of lands teeming with gold and diamonds. Protestant England burned to deliver the benighted Indians from the grasp of the Papist Spaniards; her merchants sent out from every port enterprising voyagers for India and the coast of Guinea; adventurous navigators sought out year after year new routes to the golden regions through the Arctic Seas; and even noble peers, whose ancestors sold their lands to equip their retainers for a French campaign, now disposed of their acres in like manner, to man a fleet wherewith to capture the Plate ships from the Spanish Main. During the French wars, trading and shopkeeping, despised by the nobles, and contemned by their followers, were left exclusively in the hands of foreigners, whose companies and guilds increased so rapidly, that they threatened to make a commercial conquest of the country. Native merchants and workmen, unprotected by laws or customs, were unable to resist the constantly extending tyranny of these powerful companies, whose privileges were secured by ancient charters, and who basked in the sunshine of royal favour. But no sooner were the French wars terminated, and the nation, by a long breathing time of peace, enabled to see into the true bearing of its own concerns, than the German merchants of the Staple and the Steelyard, and the numerous brotherhoods of Lombards and Italians, were gradually deprived of their monopolies; their markets were thrown open to the people at large, and the nation rushed into commerce, and planted factories beyond sea, with all the daring and intrepidity and pertinacity of purpose which distinguished the foemen of Cressy and Agincourt.

The possession of a paltry province, or petty town with miserable streets, must have been grandly scorned by men who navigated the globe for the discovery of ancient but long obscured empires, or penetrated an illimitable continent for the capture of cities whose houses were reputed to be gold and their pavements silver.

Such were the magnificent ideas and actions, in which all the ancient energy of the English character, as displayed in wars for French conquest, was completely absorbed. The ancient hatred of France died away; and though it revived after a long entombment, its resurrection was brief, and was totally unconnected with the lust of French dominion. Once again, in our own day, it has descended to the grave; for ever, let it be hoped. For we in our day, as our ancestors in the days of Henry Tudor, have bitterly learned the lesson, that there is neither honour nor profit in Continental dominion, or in our former constant interference with Continental politics. The sea is our natural element; that is the proper place for English energy to shine in. Such was the counsel of our statesmen three hundred years ago; and reflection and dearly-bought experience have taught us that it is both true and wise.

EIGHTH ORDINARY MEETING.

ROYAL INSTITUTION, 7th February, 1870.

JOHN BIRKBECK NEVINS, M.D., PRESIDENT, in the
Chair.

The Rev. H. H. Higgins exhibited some fine specimens of fungus (*Peziza coccinea*), which he had found at Rainhill.

Mr. Mott called attention to the reported death of Dr. Livingstone, and strongly deprecated the transmission of such reports from English agents abroad, in which neither names, dates, places, or trustworthy authorities were mentioned. He considered that accounts of such men as Dr. Livingstone, in whom the whole nation took the deepest interest, ought not to be sent off-hand to this country by our officers located on foreign stations, and then went on to explain his reasons for not crediting the story which had been circulated.

Mr. A. Higginson next read a letter from Mr. Clarke, of Saffron Walden, in which the following new fact concerning the nightingale was mentioned:—"It is an inveterate bee-eater; with its beak it will tap the entrance of the hive, something after the manner of a woodpecker tapping the bark of a tree. This causes the insects to rush to the entrance, when they are seized with the avidity of lightning,

snapped in the middle, and the head half swallowed, until quite a heap of bodies mark the devastation it has created. A neighbouring bee-keeper set a spring trap, and caught one. He left it alive; a vast cluster of bees, instinctively knowing it to be their enemy, surrounded it, and, as it soon died, it was taken for granted that it was stung to death." The communication of this fact led to considerable discussion.

The following paper was then read :

THE CHEMISTRY OF THE PLANT AND THE ANIMAL.

By EDWARD DAVIES, F.C.S.

At the present time, few scientific questions are exciting more investigation and speculation than the phenomena of that mysterious property of organisation which we call life. Whether we consider it in connection with the humblest forms of vegetable or animal life, or with man himself, embracing its relations to consciousness and thought, no subject can be more engrossing to an enquiring mind, nor more worthy of our highest powers. Long considered as something *sui generis*, to be taken for granted without seeking to know how or why it was, it is now submitted to the keenest discussion, and a feeling seems to be abroad that it is something not so wonderful after all. Ages of daring speculation have been before, but the distinguishing features of this era are that scientific explanations alone are admitted, and that the unknown is confidently pronounced to be only another form or combination of the known. The study of the forces of nature has yielded results of such magnitude, that we may be excused if we put no limits to its future triumphs. But are we sure that we know all these forces? certainly we do not know why they are, why under some circumstances we have the development of one, and under others of another. At least we may be sure that in the study of the known forces we are on safe ground, and that modest research rather than bold theorising is the sure way to wrest nature's secrets from her grasp.

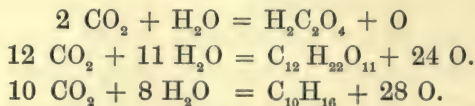
At one time electricity was the favourite explanation of

life, as of almost all phenomena which could be referred to nothing else. But this is now sunk, to be only useful in telegraphy, and to be called in by the unlearned to explain table-turning ; chemistry seems to have taken its place ; and, lo ! life is a chemical equation.

Some slight help to our thoughts on this subject will be to have clear ideas as to what we know of the chemical reactions which take place in animal and vegetable organisation. Not that organic chemistry can be compressed into one paper ; but the broad principles of chemical action may be unfolded, and the different manifestations of that action in these two great departments of life, contrasted. The chemical reactions which take place in those humble organisms, whose place has so long been unsettled, are now generally admitted to be the surest guides to a true location of them as plants or animals. Spontaneous motion having been given up, no other distinction than the chemical one is at present possible, if there be indeed a distinction, as I believe there is.

The nutrition of vegetables is derived wholly from the inorganic world. Carbon di-oxide, water, ammonia, and mineral salts constitute their pabulum ; and these are taken through their exteriors, to be elaborated into compounds of the greatest complexity and variety. They pass into the interior of the cells by endosmose through the outer walls, and not through visible apertures ; and must be in solution in water or in the gaseous state. The internal processes are for the most part characterised by deoxidation, no vegetable substance containing sufficient oxygen to convert its carbon into carbon di-oxide, and its hydrogen into water. This process of deoxidation reaches its maximum in the formation of hydrocarbons, composed solely of hydrogen and carbon, and its minimum in some organic acids, especially oxalic acid. The surplus oxygen is evolved by the leaves of the

plant, constituting a kind of respiration, the importance of which in the economy of nature is well known. A few instances may be given of the decompositions of water and carbon di-oxide to illustrate these remarks.



Ammonia enters into the reactions which furnish the nitrogenous matters, such as albumen, gluten, and the long list of vegetable alkaloids, and those vegetable products which contain sulphur and phosphorus obtain these elements from mineral sulphates and phosphates. In the living plant we have, therefore, the great laboratory of nature, where, from the simplest materials, or, to speak more accurately, from the simplest binary compounds, a list of products is produced, whose number we shall never know until every species of plant has been exhaustively analysed. Dyes of every hue, medicinal agents of every variety of action on the animal economy, the blandest oils and the most corrosive juices, together with food for man and beast, are all produced, like the endless patterns of the kaleidoscope, from a few materials in endless permutations and combinations. The vegetable is the constructor, the renovator, which, by its living power, seizes on the dead matter and incorporates it with its own living structure. In the humblest forms of vegetable life, in the simple cell, we recognise its place among plants, if it takes in carbon di-oxide, water, and ammonia by its exterior surface, and evolves oxygen. Not that even this ground of distinction can yet be called absolute; certain amœboid forms of undoubted vegetables, especially an early stage of a fungus called *Æthidium Septicum*, and one state of *volvox globator*, are sometimes found with enclosed algæ, and other organised substances, which *may* serve as nutriment, though

I believe that this has not been proved to be the case. The yeast plant, as it can flourish in a solution of sugar, if ammoniacal salts and yeast ash be present, probably only derives its nourishment from albuminous substances, when, by their decay, ammonia is evolved. Carbon di-oxide is present in abundance, and it only remains to be shown whether oxygen is evolved. These are points which require further investigation, but in the mean time we cannot obtain a better definition of a vegetable.

In the animal the reverse chemical actions manifest themselves; instead of constructing it assimilates, instead of building it destroys; oxidation and not deoxidation is the dominant characteristic. The albumen, casein, and fibrin of the animal are derived from the albumen, casein and gluten of the plant, modified slightly in properties and composition, it may be, but scarcely distinguishable. The only marked instance of construction in the animal is the formation of fat from sugar. After assimilation comes destruction; having done their work, the tissues and fluids come under the influence of the oxygen with which respiration abundantly furnishes them, and at length water, carbon di-oxide and ammonia, or bodies which yield it with facility when out of the body, such as urea, are the sole remains of the structure reared by the plant. So far it is true that the animal assimilates and does not construct to any great extent; that gelatine, though a nitrogenous body, will not reconstruct tissue, its value as an article of food is highly problematical, and has been entirely denied; whilst saccharine and amylaceous food are only heat- and force-producers, and their value is produced by their destruction. We inhale nitrogen, but cannot combine it with other elements. The lower ranks of animal life still present the same characteristics; they must have ready-formed food; they feed on protophytes or protozoa, or dead albuminous

matter ; they take their food into their interior, digest it, and exhale carbon di-oxide.

This in its simplest form is the chemistry of living organisms ; but, on investigating more closely, we find an amount of complexity which defies our analysis. The simplest form of living matter known to us is a mass of albuminous matter which assimilates and modifies like matter or forms it. But as we get a step higher we have a differentiation of parts. In the vegetable we have a cell not homogeneous, and we find a power at work which forms cellulose as a coating for the albuminous matter. From the same materials, and almost identical in composition, starch is evolved, and then fatty or oily substances. One cell begets another cell, which has a different office, forms different products, and has a different form. In the animal, the same increasing complexity meets us, and the question arises, What does chemistry teach us about this ? Firstly, how is the machinery formed ? The albumenoid substance composed of carbon, hydrogen, oxygen, nitrogen, sulphur, and phosphorus, with numerous salts, is, so far as we know, formed only by living plants. These elements have no disposition to unite to form any but the simplest compounds, and nitrogen the characteristic element, is of all elements the most inert. Carbon di-oxide, ammonia, and water of themselves will unite to form carbonate of ammonium ; but there, under surrounding circumstances, we stop. A living vegetable is required to elaborate them into that protoplasm which constitutes our starting point of living organisms. About the formation of this, chemistry is silent. We do not know the exact number of atoms which the best defined of the albuminous substances contain, and until we do, it is futile to attempt to form them. These substances do not crystallise, do not form definite compounds, and cannot be split into definite simple compounds. They are a group by themselves,

which almost lead us to doubt about combination of elements in definite proportions being concerned in their composition. I do not say that we shall not know more about them in the future, but we now feel our ignorance, where our fathers in chemistry thought they had got knowledge. Who now talks of protein as a definite compound, and of its oxides? The chemistry of the present cannot form them, cannot give a hint as to their formation, and leaves them a legacy to the future. One of their most striking features is the difference in properties between their various varieties, combined with great similarity. Thus vegetable fibrin is only known to us as an insoluble substance, until we begin to act on it chemically; albumen becomes insoluble by heat, casein becomes insoluble by acids or by the action of rennet, yet they all give purple solutions with hydrochloric acid, are soluble in alkalis, and rotate light more or less to the left.

Secondly; given the protoplasm, the next stage to be considered is the manner in which the various products of vegetable organisms are formed. These are of two kinds. We find in a plant various substances in the solid state, such as cellulose, starch, chlorophyll, and a host of others; others are dissolved in the juices of the plant, as sugar, various vegetable acids, &c., many of which become deposited in the solid state as the plant grows. Some of these have, however, a definite form, not crystalline, but built up in such forms as starch granules, differing in form and size in different plants, but having the same chemical composition, and cellulose, in elongated cells, forming woody fibre. These are said to be organised, and these forms are beyond the reach of science to reproduce. Other vegetable products have not an organised form, and some of these have been made artificially, as benzoic acid, malic acid, aconitic acid, tartaric acid, oxalic acid, formic acid, acetic acid, alizaric acid, or alizarine, two remarkable sulphur compounds, oil of mustard and oil

of garlic, and a base caffeine, from theobromine, mannite from glucose, glucose from starch and cane sugar, oil of bitter almonds, and a few others. It will be remarked, that the majority of these are acids, and they are all tolerably stable compounds. The progress made in this branch of chemistry has given rise to some adventurous speculation as to the future production of many valuable vegetable substances, now only obtainable from plants, such as quinine, &c.; and no doubt much will be done in this direction. The results already achieved go far to prove that a great harvest may be reaped by the industrious, systematic labourer.

The bearing of these discoveries upon the nature of vegetable life is, however, the point to which I would call attention at present. An argument has been drawn from them to combat the notion of a vital force, and they have been triumphantly paraded as proofs that chemical action can account for the phenomena of vegetation. It is said, the chemist in his laboratory can imitate the processes of nature, and the notion of any special vital force is unnecessary. I think the conclusion unwarranted, for the following reasons. The chemist for the most part does not employ the simple materials of nature, and most certainly he does not imitate her processes. If I and a bird wish to cross the Mersey, and we both attain the same end, namely, the other side, — I in a boat, and the bird by flying, — it can scarcely be said that I imitate the process of the bird. No more do we imitate the process of nature in making oxalic acid, whether we boil sugar with nitric acid, roast sawdust with caustic alkali, or even by passing carbon di-oxide over sodium. What relation is there between the process by which alizarine is produced in the root of the madder, and the production of anthracene, the heating of anthracene with nitric acid, the treatment of the oxanthracene with bromine in a sealed tube, and then the

heating of this product with caustic soda? In one case, actions take place without visible intermediate steps, at one small range of temperature, and together with the formation of other substances the most opposite in their properties. In the other, varied processes gradually leading up to the final result, the employment of numerous extraneous substances, and finally we have the one valuable result. The madder root contains, besides alizarine, purpurin, rubiacin, xanthin, rubian, sugar, pectic acid, several resins, and the list ends with, "&c." Or take a recent analysis of the juice of the grape; we have grape sugar, fruit sugar, malic and tartaric acids, albumenoid substance, vegetable mucus, essential oils, extractives, mineral substances. It must be remembered that the word extractives means a number of substances of almost as indefinite and complex a composition as the albumenoids; and it is indeed the out-of-the-way corner into which the chemist sweeps up all the odds and ends which he does not understand and cannot separate.

Far more than the work of a laboratory is done without a laboratory; or rather, a laboratory with all the requisite apparatus is first elaborated, and then its products made; and also there is supposed the presence of a directing and inventing intellect in the one case, and the mere working out of laws by their own energy in the other.

In the living animal the processes appear more simple, and hence the greater attention directed to this portion of nature's kingdom by those who hold the opinion that chemical law alone guides the processes which take place in what we call the living being. Assimilation of an albuminous substance by an albuminous mass does perhaps present a distant analogy to the process of crystallisation, but clearly something more is to be found in an animal. The albuminous substance is not merely assimilated, it is modified. It becomes soluble, and is then converted into sub-

stances, which are only similar, and not identical. In this respect there is no analogy between the growth of a crystal and the increase of an animal organism, for the crystal only takes up like matter, and does not modify its composition or properties. The albuminous matters taken into the stomach must become soluble, and under the action of gastric juice are converted into peptones. This one of those chemical actions which are brought about by the presence of a ferment. Ferment action is a decomposition of one substance brought about by the presence of another decomposing substance, the products of which do not bear any relation to those of the other; as in the case of amygdaline in bitter almonds, which, under the influence of synaptase, takes up water and forms bitter almond oil, hydrocyanic acid, and glucose. Organised vegetable or animal substances often take part in these changes, but whether they are causes, or merely incidentally present, is not always certain. As to the rationale of ferment-action, we are in ignorance. What we know is the fact that, under the influence of a substance called pepsin and hydrochloric acid, albumen, for example, becomes converted into a peptone, soluble in water, not precipitated by acid or ferrocyanide of potassium. The peptone absorbed rapidly undergoes another change, as it is not to be detected in the chyle, it being again found as albumen.

Starch taken as food also undergoes changes under ferment action. The saliva first converts a portion of it into sugar, and the pancreatic juice finishes the conversion and consequent solution. Oxidation completes the destruction, resolving the starch into carbon di-oxide and water. This oxidation in the living animal is a very different thing to the oxidation of the chemist. He would be puzzled if he were asked to convert sugar totally into carbon di-oxide and water, at a temperature not exceeding 100° Faht., and with nothing but atmospheric oxygen to act on it with.

The various fluids of the animal organisation are of the most complex character. The chemical nature of saliva, bile, pancreatic juice, &c., baffles the most acute analyst entirely to unravel; and their action on the food is far from being thoroughly made out. The tissue formed is at once subject to the destroying influence of oxidation. Every muscular action is attended with death to tissue, which then slowly oxidises, until as urea it finally makes its exit from the system. It is generally assumed that the exercise of thought also destroys brain substance, but I do not know that this has ever been satisfactorily proved. Few animal organic products have as yet been artificially produced. Taurine, one of the constituents of bile, and urea comprise almost the entire catalogue, so that from this point of view we have less ground to claim animal life as the working out of ordinary chemical laws, than even vegetable.

So far we have seen what is the known amount of chemical action during what even the opponents of a theory of vitality must at present call life. That in some respect the building or assimilating organism differs from the same organism when it neither builds nor assimilates, but under the conditions of heat and moisture in which it once flourished, now rapidly tends to disintegration, is a fact, and is designated by the term living, though we must not take advantage of the use of a term, which an anti-vitalist must employ to make himself intelligible, though he does not mean by it what the vitalist does. What death is, and why, when apparently unchanged, an organism should cease to perform certain functions, are questions to which the anti-vitalist gives no reply. That there is a change, and that a great one, is shown by the fact that the distinction between animal and vegetable is now lost. The same changes happen alike to each, products of ever increasing simplicity are formed. If they do not become the prey of living animal organisms,

under the action of air and moisture and heat the final results of decomposition are water, carbon di-oxide, and ammonia. Sulphuretted hydrogen, and sometimes phosphuretted hydrogen, are also formed, in turn to undergo further oxidation, and as sulphuric and phosphoric acid to return to the mineral kingdom whence they came. The cycle is now complete, and the ever-recurring course of events recommences, by the plant again combining these relics of the dead and investing them anew with life and beauty.

I think that a little confusion has arisen, in discussing this subject, from forgetfulness of the elementary laws of chemistry. Because, at all events, the well-defined products of the animal and vegetable kingdom are formed of fixed numbers of atoms, or rather of definite proportions of elements, it has been assumed that these have therefore been grouped together under known chemical laws, or from ascertainable chemical reactions. The only fact that we know is, that the elements can only group themselves under certain definite proportions; if there are atoms of fixed weight for each element, the law is a necessity; but what we do not know is, whether they may not be so grouped by the operation of other forces than those manifestations of chemical action which we can produce in the laboratory. The final resultant must have its elements in the proportions which we term atomic, though no reaction strictly chemical may have intervened. To take an example, and that lying at the root of all vegetable reactions; carbon di-oxide is not readily deoxidised by ordinary chemical means. To remove one combining proportion of oxygen, strong heat and a reducing agent must be employed, and we know of no chemical reaction which will separate it into carbon and free oxygen, or even carbon monoxide, and free oxygen. Another important point in connection with the consideration of this subject, is the apparent suspension of ordinary chemical action in the vegetable cell

in certain cases. Who can preserve white indigo, or hæmatoxylin, or brazilin, &c. from oxidation, out of the plant, if free oxygen be present; or can reduce blue indigo, hæmateïn, or brazilein, by a process in which free oxygen is evolved? yet this is what takes place in the plant.

From the consideration of this subject, which I have imperfectly and briefly laid before you, I think that we may arrive at the conclusion, that we are not in a position to dogmatise on the question. Our knowledge of any department of it is small, and in many amounts to little more than entire ignorance. On a mere superficial examination of the processes of nature, they seem simple; but deeper insight reveals difficulties and mysteries which will find us work, I believe, for ever. I do not wish to rashly assert, what future investigation may contradict, nor to measure myself with opponents vastly my superiors in strength; but, on the other hand, I protest against being told that the whole matter lies in a nutshell, and that the question is at once and finally decided. I think I have grounds for doubt. I am sure that those who refer the phenomena, which are in question, to pure physical laws, have none for certainty. Even at the risk of being set down as a prejudiced dreamer, who refuses to awake to the enlightenment which has just inaugurated a new day of scientific truth,—a day cold but bright,—I think that Tennyson has no less weight of evidence on his side as he sings—

“Flower in the crannied wall,
I pluck you out of the crannies;—
Hold you here, root and all, in my hand,
Little flower—but if I could understand
What you are, root and all, and all in all,
I should know what God and man is.”

NINTH ORDINARY MEETING.

ROYAL INSTITUTION, 21st February, 1870.

JOHN BIRKBECK NEVINS, M.D., PRESIDENT, in the
Chair.

Jas. Macnamara Packer, M.D., was unanimously elected
an Ordinary Member.

The following paper was then read :

ON THE FEMININE CHARACTER.

BY THE REV. W. KENNEDY-MOORE, M.A.

THE diversities of character among mankind are equal in number to the individuals of the race, although the constituent elements are the same in all. It is with the mind as with the countenance. Every face has the same features, and yet no two faces are exactly alike; so the same intellectual and moral faculties are the endowment of every individual, although they are in each case so differently proportioned that every man's character is an idiosyncrasy, that is, a mixture peculiar to himself. But although the diversities of character are thus practically infinite, and each man has his own particular constitution, yet there are general laws concerning character which may be reached by observation and induction. It is found that certain influences modify and control the development of particular qualities. Under a specified set of circumstances, one feature of character will be fostered and another will be repressed. We cannot indeed tell in the case of any single individual how far this process may have been carried, without actually making him the subject of our specific observation. Some persons have so marked an individuality, that they seem hardly capable of being in ever so small a degree anything different from what they are. And of those who do receive modification from a particular set of circumstances, that modification differs in its degree from those who barely show the mark to those who have taken the full impression. There is a style of character belonging to each profession, and most of those engaged in it shew the brand in greater or less degree. Clergymen, when they go on their holiday

excursions, seek to disguise themselves in coloured neckties and wide-awakes, sedulously eschewing starched cravats and M. B. waistcoats, but they are soon discovered by their inveterate habit of moralising and alacrity in making mistakes. The physician of our times does not go about, as Hogarth pictures him, holding to the end of his nose the gold-headed cane, within which are concealed the specifics against infection. But whether he wears no indelible mark of leechcraft, I shall leave the members of the Society to determine, from the first-rate specimens we have the privilege of observing, filling this chair and occupying those benches. And thus it is with the other occupations of mankind. In all of these, the dyer's hand is subdued to what it works in. Education, social position, and physical surroundings have much to do in modifying character; and perhaps the combined influence of a number of causes can be best appreciated when we compare the men of different ages and countries. Every nation has its distinctive type of character, and this can be best observed in regard to the great leading races of the ancient and modern world.

The question we have to consider in this paper comes under the general question of the modifications of character and their causes. We have to ask whether difference of sex does tend to produce different types of character, or whether it does not. Speaking generally, and making allowance for the infinite diversity of individual manifestations, may we still say that women differ appreciably from men.

We may first observe, that, whatever difference there may be, it cannot comparatively be very great nor reach very far. We are all gifted with the same great humanity, endued with the light of reason, enriched with conscience, and stored with many a kindly affection. Those faculties which crown man as lord of this lower sphere, set their royal seal on the brow of every child of Adam's race. That inward

eye which beholds the truth of things, that hidden sense which draws a joy from the glory of the universe, those instincts after the just and good,—that will which makes use of our other powers and restrains or directs their exercise,—these are the rich possession of every being in the great human family. In all these things, woman still is man, as also in that greater dower of immortality which belongs to us alone of all the creatures which inhabit this earthly globe. Woman still is man, and the very word woman says as much, formed as it is from man with a syllable prefixed. Hence the rule in speech, that man includes woman, unless there be something to indicate that what is said is limited to the stronger sex. This I fancy is a legal canon of interpretation. It ought certainly to be attended to by those of my own profession in their exhortations to their hearers. There is nothing more odious to my ears than to hear, as I have actually done, a minister make use of a sentence like the following: “Let every man for himself, and every woman for herself, examine his or her life to see whether he or she does what is proper for him or her.” In such cases as this, man includes woman; we will not say on the mathematical principle that the greater includes the less, but on the logical principle that a class includes all subdivisions. In several languages, though not in English, we have two words for man, one of which has reference rather to the species, and the other to the sex. Thus in German, we have *Mensch* and *Mann*. In Latin, *vir* is the proper masculine, and *homo* the generic designation. In Greek, the word *ανηρ* corresponds to *vir*, and *ανθρωπος* to *homo*. In Hebrew, the word *Ish* is man, as opposed to *Isha*, woman; while the word *Adam* denotes man, as opposed to the irrational creatures. In the fifth chapter of Genesis, the first and second verses run thus, “In the day that God created man, in the likeness of God made he him, male and female

created he them, and blessed them, and called their name Adam, in the day when they were created."

We have begun by laying down the principle that woman still is man, and therefore, partakes in all the great endowments of humanity. We may notice, next, that woman is man specialised. She does not so much present to our view humanity in its general conception, as humanity adapted for a particular end. In point of fact, most men are specialised in a certain sense, or to a certain degree. A soldier is a man specialised to fight, and a judge is a man specialised to administer justice. But the difference between such specialisations as these, and the one we have to do with, is this, that they are founded in men's voluntary acts, and in the arrangements of society, whereas in the other case nature has taken the matter into her own hand. She desired to preserve her crowning race to carry on from age to age the achievements of their mighty history. As the thinkers and the workers of one era passed away like the fading generations of forest leaves, others were to be reared and nurtured to take their place, enter into their toils, carry on their heroic struggles, or reap the rich rewards of their bygone efforts. That her purpose might run no chance of failing, she herself has made provision, at each stage of time, of those whom she has appointed and designed to be the mothers of the coming race, whose office is to link together the successive generations of human kind. While retaining those endowments of head and heart which they have as belonging to mankind, they are yet prepared for a special task. This idea is brought out in the very name imposed on our first great mother. In the twentieth verse of the third chapter of Genesis we read, "And Adam called his wife's name Eve, because she was the mother of all living." The original word which is rendered Eve in English is Chava, derived from Chai, which signifies life, and is the

closing word in this very verse. Eve may then be translated as the living one, the source of life. In most languages, I fancy the name of woman has reference to motherhood. It is so in our own tongue,* and in Greek and Latin, and there seems reason to believe that this will be found to be pretty generally the case, as the reason for it is sufficiently obvious. An anecdote is related of Madame de Stael and the First Napoleon, which has some bearing on our present subject. No love certainly was lost between the gifted daughter of Neckar and that astonishing man, whose military genius was already clearing the way for him to the Imperial crown. They met, however, on one occasion, in the saloons of Paris, and Madame de Stael, no doubt by that brilliance in conversation she so largely possessed, was dividing the admiration of the illustrious company with the rising young soldier of fortune. Having secured his attention, she thought fit to put to him a question, which doubtless indicated the channel in which her thoughts were accustomed to run. She asked, Who was the greatest woman of whom we have any information? She who has borne most children, replied Napoleon, curtly, and turned away. This answer, certainly, could not have been expected, nor yet could it have been very agreeable. The rudeness of the reply, no one, I suppose, would feel inclined to justify. Nor was Napoleon right as to the matter of fact, so that his answer was no more true than it was courteous. But no doubt that which made it so stinging was the circumstance that it seemed to be based on a natural principle. The mistake was in ranking the physical side of life above the intellectual and moral, which is no more just or right in regard to women than men. The whole of what a woman is can no more be estimated by a view to a special function, even though it be of nature's own designing, than a man is to be judged by the special labour

* Woman is womb-man.

to which he is appointed in the arrangements of society. Who is the greatest tinker, one may ask, of whom we have any information? And the answer, founded on Napoleon's, might be, He who has mended the greatest number of tin kettles. Or, Who was the greatest exciseman? to which it might be replied, The man who has gauged the most whisky-casks. But the absurdity of such replies is evident. We think at once of the tinker of Elstow, who, whatever may or may not have been his achievements with tin kettles, has made his name immortal, and has done a service to all generations of mankind with his matchless allegory, the *Pilgrim's Progress*. Or, again, the image rises before us of that ill-fated genius whose ashes sleep beside the Nith, but whose songs of patriotism and love have girdled the whole globe. Bunyan and Burns are to be judged of as men, and not by their particular profession; and so is woman also to be measured, by those higher endowments of mind and heart which are hers, and not merely with a view to a special designation. If Napoleon's dictum were correct, the large-limbed, large-fisted mistress of some Irish hovel, surrounded by her brood of squalid, screaming, fighting imps, should be counted worthy of greater honour than the heroic mother of the Gracchi, than the gentle authoress of the *Graves of a Household*, in whose fame this bustling town of ours claims some little share, than the lady to whose honour Florence has inserted a marble tablet into the wall of the house she dwelt in, whose memory her poet husband has adorned in *The Ring and the Book*. Lord Bacon makes the remark, in one of his brief and weighty *Essays*, that "childless men have usually been the great benefactors of their kind." Those powerful affections, for which the ordinary absorbing channels were not provided, diffused themselves over a wider space, and instead of concentrated and narrow family regards, we have expansive beneficence and distinguished public

service. Perhaps this remark applies with still greater force to the tender sex. Those of them whose names and memory have become a part of the rich legacy of Time, have usually had to pay the penalty of their greatness in a certain loneliness of life.

With only Fame for spouse, and their great deeds
For issue, yet they live in vain, and miss
Meanwhile what every woman counts her due—
Love, children, happiness.

We have dwelt so far on these two ideas, that woman in all the essential qualities of humanity is the same as man, and then that she is specialised by nature with a certain view. We have not entered on the question, how far this specialisation affects or modifies the character. It is possible to imagine that some may hold that it has no such effect at all. It may be argued that the distinction has reference merely to the physical side of our being, and has no influence whatever on the intellectual and moral qualities. This view would put the two sexes on an absolute level, or, rather, make them identical in all that concerns the heart and mind. Under this theory, there would, properly speaking, be no such thing as a feminine character. Let this phrase not be misunderstood. It is not meant that women would have no character, but that they would have the same character in all its strength and fulness that men possess, the same intellectual and moral qualities unaltered and unmodified. Those who hold this view, instead of deeming it an uncomplimentary thing to assert there was no feminine character, would, on the contrary, hold that this was the highest compliment you could pay to women. It would certainly assert the equality, or, rather, the identity, mentally and morally, of the sexes in the strongest possible way. Those who hold this view can hardly hold it in its bare and absolute form. It is far more

likely to be held with a modification, which would not, however, affect the essential character of the theory. The modification would be something of this sort. It will be acknowledged that there is in point of fact a distinctive type of character, which we commonly find belonging to women. But it will be denied that this has its source in natural constitution. Other sources will be pointed out, to which its origin is to be traced. These sources are mainly two, viz., education and social position. Women, it is argued, have never received the same advantages of education as men. They have never been fully and systematically trained to a mastery in the world of knowledge. The mere elements of learning, or some poor superficial accomplishments, have been thought good enough for them, if even these have been accorded. Woman has thus been treated most unjustly, and that throughout the whole history of the world. She has never had fair play; and hence it is that, though her powers naturally are quite equal to those of man, she has appeared permanently to stand at a lower level. Let the system of female education be altered, and we shall see all this reversed. Give her intellect the same food of truth to be nourished on; give her faculties the same elaborate and long continued training, and then will it be seen that there is no natural disparity between the sexes, but that what the man is in force and intellect that the woman also is; no more, it may be, but certainly no less.

Convention beats them down;

It is but bringing up, no more than that;
You men have done it.

Some said their heads were small;
Some men's were small, not they the least of men,
For often fineness compensated size.
Besides, the brain was like the hand, and grew
With using; hence the man's, if more, was more.
He took advantage of his strength to be

First in the field : some ages had been lost,
 But woman ripened earlier, and her life
 Was longer, and albeit their glorious names
 Were fewer, scattered stars, yet since in truth
 The highest is the measure of the man,
 And not the Kaffir, Hottentot, Malay,
 And these hornhanded breakers of the glebe ;
 But Homer, Plato, Verulam ; even so
 With women, and in arts of government
 Elizabeth and others, arts of war
 The peasant Joan and others, arts of grace
 Sappho and others, vied with any man.

The difference of education is thus made responsible in part for the difference in character we see actually existing. But still greater stress is laid on the other point we mentioned, namely, difference in social position. Woman, it is said, has always been kept in undue and unnatural subjection. She has always been the slave of man, though her bondage has not always been equally harsh. In savage communities, her condition has been hard and her treatment execrable. She has been a mere drudge, a tool, a beast of burden. She has had every heavy and disagreeable task thrust on her, while the man has indulged himself in idleness, save when roused by the passions of war or the excitement of the chase. In more civilised societies, woman has been petted and fondled, decked with jewels and finery, kept in ease and comfort, and treated with great deference and courtesy in the idle hours of social intercourse. But she has been a slave for all that, and so still continues to be. In her early years, she is a slave under her father's will. And from him, in her riper womanhood, she passes into the husband's house, to submit herself to his domestic sceptre. If by any chance she be left free from paternal or marital tyranny, she is sure to fall a prey to some brother, guardian, executor, trustee, or other despot of like kind. But she never by any chance attains to

the enjoyment of that freedom for which she was naturally designed, and of which she has been so constantly and so unjustly defrauded. Her chains are not always of iron, hard, heavy, and grievous. The bonds are sometimes of the softest, smoothest silk; but they hold her fast just as securely, and make the possibility of freedom just as much a dream as the harshest fetters. She may be a favourite, who is much made of, and even much beloved, but she never ceases to be a bondswoman. And what can we expect from long ages of such bondage, but that the character should be dwarfed and stunted? Woman has been so subdued that she has accommodated herself to her subjection. She is proud of her chains, especially when they can be borne without galling the flesh, when they are smooth to the feel, and look bright and beautiful to the eye. But once rouse in her bosom the generous spark of indignant self-asserting freedom, but once cease to withhold her proper heritage of independence, and her character will rise, her powers will be enlarged to the fulness of their natural growth, and she will take her place side by side with man—in all points of moral and intellectual endowment, his companion and his equal.

With regard to the whole of this reasoning, I would simply make one or two general observations. It cannot be denied that women have been very unjustly and hardly dealt with in many nations, and at different periods of the world's history. Nor would I like to hazard the assertion that there are no laws at present in force among ourselves but such as are perfectly just and wise. The general principle upon which all legislation should proceed is this. Laws should follow nature; that is, their enactments should be in harmony with the truth of things. They should operate in concert with those natural laws which bear upon the welfare of men and society. If this principle be admitted, it follows that distinctions ought not to be established by law which do not

exist in nature. Nor, on the other hand, should such distinctions as nature has established be ignored in law. Certainly the current of our times is rapidly sweeping away all mere artificial distinction in society, and so far, perhaps, all is well; but there is a possibility that efforts may be made to abolish the ineffaceable landmarks of nature's own erecting, and any such attempt, if made, is certain to be fraught with mischief. With regard to the matter in hand, although we were to concede the possibility of some remaining unfair and hurtful legal or social regulations, I do not think we can by any possibility allow that the general description of the state of the case as given above is really correct. Woman, among us, is not a slave in any proper sense of the word. To describe her as such is a mere abuse of language. Nor is the position she actually occupies at all unfavourable to the development of her character and powers. On the contrary, it may be very justly asserted, that it is eminently fitted both to secure her welfare and draw out all that is excellent in her. And of this I have no doubt whatever, that the effect of some of the changes that are advocated now-a-days would be simply disastrous. The general principle, that woman is naturally in mind the same as man, that the feminine character, except for external modifying causes, would be the same as the masculine, or, rather, that there would, but for these unfortunate circumstances, be no feminine character at all, is a principle which I think most people will be slow to admit. The general impression among mankind has always been that there is a difference, though they may not be able to specify exactly what the difference is. We may accept this general persuasion as a strong presumption in favour of such a difference actually existing. I proceed to enquire more particularly into its nature.

In order even to approximate to a true solution of this question, it seems evident that we must start from that idea

of motherhood of which we have already spoken. Now, the first obvious quality which seems to flow from this is, that fondness for little children which is a striking characteristic of the tender sex. I do not mean a desire for offspring, the wish to have little ones of our own, who are born of our blood, and are the heirs, as it were, of our life. This is one of the deepest instincts in our nature; but I do not know that it exists more strongly in one sex than the other. In many cases, and especially in that of families of historic lineage, hereditary title, or large possessions, we might not be mistaken in supposing that the desire for an heir was a keener and intenser feeling with the head of the house, than even with his spouse. There is a distinction between this desire and the feeling we spoke of as characteristic of woman. The latter is a fondness for very little children,—for babies, in short,—in which I do not think men commonly share. An instinctive interest and delight in nurselings is a marked feminine peculiarity. It shews itself very early in life, for you see very diminutive creatures of girls, wee things hardly able to toddle themselves, whose bunchy little hands and plump dimpled arms are busily engaged in nursing and carrying about and dressing Dolly. The motherly instinct seems especially early developed in the children of the poor, and I dare say we all have seen a lassie of five or six years of age carrying about her little sister or brother, and watching over and amusing the baby most lovingly. The difference between boys and girls in this respect is very cleverly hit off in one of those amusing pictures which have made *Punch* so popular. A little baby is brought out for exhibition to a number of young ladies, who all set up a chorus of delighted exclamations. O, what a dear! What a darling! O it is the sweetest, prettiest pet; the dearest darling! Did you ever see such a beauty? In the corner, meanwhile, stands a horrid, plain-spoken boy, who

disburdens himself thus ; I think it 's a nasty, ugly little beast, for all the world like a cat or a monkey. I am afraid it is unfortunately only too true that gentlemen usually give a wide berth to babies, especially in railway travelling. I have heard ladies say that gentlemen think all babies are alike. Very good papas might, I dare say, be easily enough imposed on in this matter, and made to believe that some other brat was their own precious bantling. And I have no doubt whatever, that, on many an interesting occasion, the whole assembled female coterie, from the excellent old lady who has just attained to the honour of being a grandmamma, down to the nurse who has carried in the little stranger, have been dreadfully disgusted at the want of appreciation of the loveliness of the infant on the part of its paternal parent. A learned man, and a great friend of my own, once spoke to me of his growing experience of the feelings of fatherhood. He said that he was not conscious of any affection towards his little one when she first appeared. As a nurseling of a few days old, it had no special interest for him. But as it grew, he felt drawn to it more and more. He began to watch the little movements of the strengthening limbs and the tokens of new intelligence in the beaming little eyes and face, until at last his affections had twined themselves most firmly round the dear babe, and he felt a want whenever it was out of his sight. I shall not presume to say, whether the experience of my friend is in all respects a typical one, but we may accept it as a fact that such was the history of his parental affection ; and we cannot but feel at once how great the difference is between such a love and that fond, absorbing, all-engrossing attachment to the babe which the mother shews. This peculiar maternal affection has been provided by kind Nature's fostering hand, to enable the mother to go through that heavy task of tending, watching, and perpe-

petually caring for her little one which is needful for the welfare of its tiny life. I have no doubt that the constant payment of these acts of care and kindness is, after all, a real gratification to the female heart, and twines the tendrils of its affections inextricably round the little object of all those offices. Mothers love those children best whom they have nursed themselves; and I fancy even hired nurses, if truly womanly in their character, never cease, even with the lapse of years, to retain an affection for those they were paid to rear.

The gifted authoress of *Aurora Leigh* remarks that—

Women know
 The way to rear up children (to be just).
 They know a simple, merry, tender knack
 Of tying sashes, fitting baby shoes,
 And stringing pretty words that make no sense,
 And kissing full sense into empty words.
 Which things are corals to cut life upon,
 Although such trifles. Children learn by such
 Love's holy earnest in a pretty play,
 And get not over-early solemnised.
 But seeing, as in a rosebush, Love's divine,
 Which burns and hurts not, not a single bloom
 Become aware and unafraid of love.
 Such good do mothers. Fathers love as well
 (Mine did, I know), but still with heavier brains,
 And wills more consciously responsible,
 And not as wisely, since less foolishly.
 So mothers have God's license to be missed.

In consequence of this peculiar clinging to the little ones, we can understand how the loss of an infant is such a dreadful blow to the bereaved mother. Perhaps few tears are more bitter than those shed over the tiny coffin of the little child. It seems as if the tearing of those tendrils which bound the babe to her bosom makes the mother's very

heart to bleed. This point has been frequently noticed in the writings of one who, under an outward covering of a cold and cynical philosophy, has touches of the truest and deepest pathos, as well as uncommon insight into the peculiarities of the feminine character. In one of his shorter sketches, for instance, Thackeray tells us of a young married couple, who lost their first child when five weeks old. The husband is made to remark that they had lived together happily since then for many years, and had other blooming ones who had grown up around their knees; yet that he often knows, by her remarks, that his wife is thinking of their first-born, and that she has treasured up in her mind, as holy and most precious remembrances, everything connected with that little one, who was so soon snatched away. In his most famous work he closes a touching passage with these words. "By heavens! it is pitiful; the bootless love of women for children in *Vanity Fair*."

The next feature of feminine character on which we shall just touch, is that of native modesty, or sensitive purity of mind and feeling. The integrity of family descent is specially under the guardianship of woman. As this is a matter of the highest consequence, legislative safeguards have been abundantly provided to fence it round; and, what is unspeakably more effective, a strong sentiment of female honour has been evoked, the influence of which can hardly be overrated. This peculiar manifestation of the sentiment of honour has its foundation, however, in nature itself. Every ingenuous mind, indeed, has a quick sense of shame. When this is altogether destroyed, whether in man or woman, the moral character has reached its lowest pitch of degradation. The rough commerce of life is, however, apt to blunt this sensitiveness in men, unless they are careful to maintain and cultivate their finer and better feelings. To those blunting influences women are less exposed, and perhaps we do not

err in supposing, that even naturally, their sensitiveness is quicker than with us. Pudicity, to naturalise a Latin word, for which our language has no other exact equivalent, is a quality that belongs to the very essence of womanhood. Modesty is woman's choice adornment. The charm and fascination of feminine loveliness cannot exist without it. And herein is it that the refined and excellent of the gentler sex have so vast a power in preserving the purity of society. Their influence counteracts those degrading and lowering influences of which the world is still so full; and we may safely say that the man who counts such among his friends is under very favourable circumstances for ripening into full sweetness and nobility of character.

The next point we may notice is one of much smaller importance than those on which we have already dwelt. It is the desire to be attractive in person, connected with a quick taste in all matters of adornment. The power of fashion among women is a fact of which we have every-day experience; and the vagaries that have marked its sway have furnished matter for amusement to the caricaturists of all ages. Nor can it be questioned that the love of dress and ornament acquires all the mastery of a passion over some women, and often leads to most disastrous issues. We do not mean, however, to assert that there is nothing of a similar sort among men. It is with reference to our sex that Shakspeare puts these remarks into the mouth of Borachio. "See'st thou not I say what a deformed thing this fashion is? How giddily he turns about all hot bloods between fourteen and five and thirty! Sometimes fashioning them like Pharaoh's soldiers in the reechy painting; sometimes like god Bel's priests in the old church window; sometimes like the shaven Hercules in the tarnished, worm-eaten tapestry." To which Conrade replies: "All this I see, and see that the fashion wears out more apparel than the man."

I am afraid it must be confessed that the brood of coxcombs and fops, of bucks and dandies, has never been very scarce. Yet for all that I think it may be held that the taste for personal adornment is more constant and powerful among women than among men. Nor, in saying this, do I intend it as a disparaging remark. My conviction is that tastes and feelings of nature's implanting must be intended for good, though they may be turned to evil. The taste for personal attractiveness is one of the civilising influences of life. It tends to produce, and is characteristic of, refinement. A gentleman, and above all, an English gentleman, will never suffer his person to be repulsive from want of cleanliness or neatness. And among the lower classes, we have abundant opportunity for noting how the lack of care for attractiveness in house and person is an unfailing mark of considerable degradation. By her delight in the tasteful and beautiful, woman exercises a refining influence. She helps to make home attractive. By pleasing his eye, she keeps a greater hold on her husband's affections. And those charms of beauty, with which nature has gifted her, which are her crown of glory, are set off to fuller advantage, and made still more to be a source of joy and gladness.

The next point I shall mention is one which seems to me to enter peculiarly deep into the feminine character. It is the inborn and irrepressible craving which woman has to be herself an object of affection. So marked a feature is this in her nature, that it seems to me hardly possible to conceive of any woman as destitute of it. This, perhaps, is the distinctive mark of her special nature. No doubt, in the bosom of the man, the same feeling has its place. The human heart craves for affection, and is dissatisfied and unhappy without it. Man was not made to be alone, and our spirit demands sympathy and love as much as the body hungers for food. It is remarked by Bacon, that love occupies a larger place in

poetry and drama than it does in real life. This is doubtless true. Novels wind up with a wedding, at the end of the third volume; but we know well enough that a great deal of life comes after, and that there is a very great deal in the battle of life with which love and marriage have very small concern. Still, the very fact that poetry and fiction deal so much with one passion, shews how deeply it enters into human life. And we may justly say, that the securing of a deep, pure, and constant affection is one of life's greatest prizes; one on which our happiness, and even our mere outward success, very much depend. Still, I think we may come back to the point we started from, and hold that the intense craving to be beloved is a feature of the feminine character. There is a familiar illustration, which, I dare say, has been used in literature ever since literature began, and doubtless was employed long before the first book was written, and might have been suggested to the first pair of human kind in Eden itself. It is that which compares the man to the tree and woman to the climbing plant. The first maintains its own erectness of growth, but the other seeks for some support, round which to clasp its tendrils. Like other images, this one must not be pressed too far; but yet there is a great deal of truth in it. Man plays for many prizes, but woman's only stake at the game of life is that of affection. Ambition and avarice are two great passions which dispute the mastery with love over man, but woman's life is simpler in this respect, and she remains under allegiance to one enduring principle. We may make a short digression here, for the purpose of considering how this point bears upon the question of the so-called subjection of women. That the husband should be the head of the house, is not a rule that depends for its force on any legislation whatever, or any mere inveterate prejudice, or any established custom. It is founded in the very nature of

things. If it is iniquitous and wrong, the blame rests on nature herself. Man has been made stronger than woman. There is a difference between the development of bone, sinew, and muscle in the one sex and the other. And even if woman were quite as powerful in frame as man, it would not affect the question very materially. In the normal course of things, she must be incapacitated for that continuous toil which is needful in most of the walks of life. Nor has she, nor is it desirable she should have, that hardness of character which is necessary to success in all public spheres. In a regular and quiet line of business, she may do something, but such great successes as are achieved in the rough and public places of the world, she cannot contend for. Hence it is that money, the great payment for all labour, is made almost exclusively by men. Hence it is that owning the house, and providing for the sustenance of all in the house, it falls to him to be the constitutional monarch of the domestic world. Like other general rules, of course, this has its exceptions. Those of you who have been in Edinburgh will remember the musical cry and picturesque appearance of the women who belong to the fishing community at the village of Newhaven. These sturdy dames furnish a by no means unpleasing picture with their snowy caps, many coloured petticoats, and brawny shoulders, sustaining their creels loaded with the finny spoil. Their muscular development is splendid; and it is a very well understood thing, that in their little world it is the woman who rules the house. When a lassie, of whom the neighbours do not entertain a great opinion, is about to enter the ties of wedlock, the good gossips may be heard exclaiming, "Eh! she is a puir feckless thing; what can she dae with a man?" A Newhaven woman well explained the whole theory of the subject, in these words; "The husband catches the fish, but the wife goes to market. She sells the fish, and the one

that sells the fish keeps the purse, and the one that keeps the purse rules the house." This is constitutional logic. In this country, the House of Commons has become really supreme, because it has the power of the supplies. In savage life, brute force gives mastery; but with the advance of civilisation, money takes the place of muscle, and the long purse is king instead of the strong arm.

I have said the husband is constitutionally the monarch of the household. But we all know that in constitutional monarchies, like that of our own country, the real sway falls into the hands of the ablest statesman. So is it also in the domestic world, where the wife is cleverer than the husband. Though she may appear always to defer to his wishes, in point of fact her natural superiority gives her the real guidance of the household.

Taking it for granted, however, that the normal position of woman is that of occupying the second place, I think that the representation of this as a humiliating or unhappy condition is altogether false. The peculiar character of woman's affection, I think, is exquisitely adapted to this very end. As we have seen, her peculiar passion is to be the object of love, the recipient of affection. She has a twining and clinging nature, and demands some stronger object round which she may wind herself. That object may be less noble and excellent than she is; but it is with her as with the vine, which may clothe with its leaves and adorn with its clusters some poor and barren stock.

In proportion to the demand for affection which belongs to woman's nature, is the power of lavishing and spending affection in return. In the finest natures these two things are commensurate; and we fain would give our love even as we desire to get love in return. Woman has an immense, I had almost said an infinite, treasure of affection, which she most freely and fondly spends. It is a noble and touching

quality, and an invaluable one to man. When the proper natural channels are provided, it is amazing to see what a force it has, and what it will accomplish. And where it is shut out from these natural channels, the manifestations of the feeling are sometimes both pitiful and ludicrous. Hence those wonderful friendships of school girls and very young women for each other, which, like Jonah's gourd, spring up in a night to full maturity, and very often die away as quickly. Here also have we the clue to the traditional cat and parrot, which comfort the loneliness of the solitary single lady. Such a lady once remarked, "I am an old maid, and must have something to love." As for the treasure of constant, pure, self-denying affection bestowed by maiden ladies on their sisters' children, I don't know how the world would get on without it. It has been said the best of women never marry. I should not like either to deny this or affirm it; but I know a gentleman who advised a friend of his to marry the pretty sister, and get the good one to live with them: an arrangement perhaps oftener made than talked about. And the sentiment is no less just than kindly, expressed by Ballantyne, in one of his Scottish songs:

O how may hand-bound Minnie get
 Her tottums clad sae gaily?
 The youngest aye is Aunty's pet,
 Wha brings him presents daily.
 An' wha wad take the orphan's part,
 An' twine for him the plaiden
 An' 'twere na for the kindly heart
 O' his dear Aunty Maiden?

Oh! mutual love is mutual bliss;
 Young mous were made for preein!
 An' when we pree the half-stown kiss,
 We're getting whaur we're geein!
 But there 's a love seeks nae return,
 Frae them wi' pourtith laden;

A heart to beat for them wha mourn,
 A kindly Aunty Maiden.
 Then twine it weel, and twine it weel;
 Then twine it weel, the plaiden;
 There's nane ere twined or toiled for me,
 Like my auld Aunty Maiden.

A question may be raised here, as to whether there is greater constancy in affection among women than men. The authority of the great dramatist seems to be in their favour, if at least we suppose Shakspeare expresses his own opinion, in the words he represents the Duke, in *Twelfth Night*, as addressing to Viola.

For, boy, however we do praise ourselves,
 Our fancies are more giddy and infirm,
 More longing, wavering, sooner lost and worn,
 Than women's are.

To determine this question is not easy. The ballads and songs of all lands and times have been full of the praises of constancy on the one hand, and complaints of desertion on the other, and these seem to be shared pretty equally between the two parties in the relation of affection.

Passion and pathos, love and sorrow, rapturous eulogy and heartbroken complaint, have always been, and always will be, the burden of this poesy. Legends celebrate the unaltered truth of such pairs of lovers as Hero and Leander, as Pyramus and Thisbe. In the Hebrew writings, the only tale of passionate wedded love is that of Jacob and Rachel, in which it is he, and not she, who displays its power. We have indeed an intense constancy of affection, in another relation, in that most beautiful pastoral tale of Ruth the Moabitess; but over against it we may set the love of Jonathan to David, the most striking story of friendship with which the world has been enriched. If the measure of grief

be the measure of love and constancy, we have the widow of Mausolus, who erected that magnificent monument which has given a designation to every splendid place of sepulture. But, on the other hand, there is the Taj-Mahal at Agra, one of the sweetest gems of architecture, in its marble whiteness, its airy dome, and inlayings of gems, erected to the dear memory of a beloved queen. I am inclined to think that, while as great and striking instances of constancy have been shewn in the one sex as in the other, yet on the whole the manifestation is more common on the woman's side. Indeed it seems to be made almost a reproach to woman, that she should continue to waste her affections on one who has proved himself utterly unworthy of them. In the character of Amelia, this weakness has been pourtrayed by a master hand. It is introduced by Hogarth, in his series of the Rake's Progress, where, however, it rather mars the unity of the conception. It is an idea rather frequent in literature,—and I am sorry to add I am afraid it is a fact by no means uncommon in life,—that a poor woman has given her heart to a base unworthy wretch, and never ceases to love him to the end of the sad and melancholy story. Let me say, however, that while this in one point of view may be looked on as a weakness, in another aspect it is one of the divinest qualities in our fallen nature. The greater and more noble and generous the spirit, the more unwilling is it to believe that what love has been bestowed has been bestowed in vain. We will not willingly abandon enterprises in which we have put out our money and our toil. We would rather spend more and labour more, in the hope of achieving our desire at last. Much less can we be willing to let go our hold of that on which, as it were, we have spent the very life of our hearts. Our very spending of the affection binds it to us by bonds which may be exquisitely painful, and yet which we will not sever. Let me only remark further, that we have set before

our eyes, in our own day, a story of life-long sorrow for the departed, in the royal lady who rules these realms. Whatever difference of view there may be on this point, there can be none on the next we shall mention, which is, the fitness of woman to minister to pain and trouble. I have seen it stated in a physiological article, that women are less sensitive to bodily pain than men are, at least, than men of fine organisation. Whether this be so or not, I cannot say; nor do I understand what means there can be for reaching any conclusion whatever on this point. But I think it may be fairly admitted, that commonly women bear pain more patiently than men. I dare say we have all been both amused and annoyed, at seeing great big burly fellows fret and fume and fidget when the least thing has befallen them; and I should not wonder if a good many of us had made fools of ourselves in that very way. No doubt there is a Stoic power in man, called out by great troubles, but this power of stern endurance is apt to be connected with want of sympathy. The spirit gets hardened, so as to feel less itself and have less fellow-feeling for others. But woman's quiet, much-enduring, uncomplaining spirit is united to a very pitiful and compassionate nature, and great readiness to feel for another's sufferings, according to the line put by Virgil into the mouth of the unfortunate Carthaginian queen—

Haud ignara mali miseris succurrere disco

I well have known the pangs of ill and grief,
And to the wretched long to bring relief.

The lines of Sir Walter Scott, in the death-scene of Marmion, are well known—

O woman, in our hours of ease
Uncertain, coy, and hard to please,
And variable as the shade
By the light quivering aspen made.

When pain and anguish wring the brow,
A ministering angel thou.

This idea of woman's destiny is most touchingly brought out in Mrs. Hemans' poem, entitled *Evening Prayer in a Girls' School*, from which I shall quote a few lines—

Yet in these flute-like voices mingling low
Is woman's tenderness—how soon her woe.
Her lot is on you—silent tears to weep,
And patient smiles to wear through suffering's hour,
And sunless riches from affections deep
To pour on broken reeds—a wasted shower;
And to make idols, and to find them clay,
And to bewail that worship. Therefore, pray
Her lot is on you—to be found untired,
Watching the stars out by the bed of pain,
With a pale cheek, and yet a brow inspired,
And a true heart of hope, though hope be vain:
Meekly to bear with wrong, to cheer decay,
And oh, to love through all things. Therefore, pray!

There is a story of the true-hearted, gentle ministry of women to the Man of Sorrows, to which I can do no more but make this passing allusion. But this may serve to introduce the next point I would touch on, namely, the great place the religious element possesses in the feminine character. This has been made indeed a matter of reproach to women, that they are so easily beguiled by devout impostors, are so deeply tinged with superstition, and can be so completely carried away by the tide of religious enthusiasm. When these charges are made, in which we must allow a certain measure of justice, let us also remember that the weaknesses of a character are connected with its strength. One falls on the side on which he leans, as the present French Emperor said in his famous letter. Our excellencies and foibles are twin to each other. And if woman be more

a prey to delusion and superstition, it is just because pious aspirations and religious emotions are so powerful in her nature. Whatever evils may have occasionally resulted from this peculiarity of constitution, we cannot but hold that it is an honour to the gentler sex, that, in the highest element of our being, she should have so large a share. The more our faith takes hold of unseen and infinite realities, the more our love goes out to the divine and heavenly, the higher shall we esteem, and more dearly shall we prize this pure, ennobling element in woman's nature.

In my remarks, so far, I have endeavoured to follow out a consecutive line of thought. My few remaining observations will be of a more fragmentary character. Let me just notice again a point I have already mentioned, namely, that woman not only differs from man in a special function, but also in a greater general delicacy of the physical constitution. Now, from this greater bodily weakness, I am inclined to draw the conclusion that what may be termed the physical sensations or passions exist in proportionably less force. In *Shirley*, the second story by Charlotte Bronte, we have a little incident recorded to this effect. The heroine, who is an heiress, has a plan in view, which can only be carried out with the good-will of the three parsons who rule the three parishes of that neighbourhood. She accordingly invites them to dinner, and deals most hospitably and kindly with them at her table, and thus gets the better of all their prejudices and reluctance. One simple honest soul does not see at all that he is being manipulated; a second has a dim conception of something suspicious, but does not know what to do but follow; the third, a keen, shrewd, quick-eyed old boy, sees well enough he is being led by the nose, but, under the soothing influence of the dinner and the wine, thinks it better just to go along quietly, without making any ado. The fair plotter is pleased at her success, but cannot help impart-

ing to her lady friend, in confidence, her views as to the weakness of the male sex, who can be done so easily. Now, I have no doubt this humorous picture is founded on truth. A gentleman of Epicurean tastes, in taking a trip to Paris, determines to pay a visit or two by himself to the *Trois Freres Provençaux*, at the *Palais Royal*, and try all the most *recherché* dishes at that famous restaurant. He has no compunction at all about not having his wife with him, for he knows that she, good soul, will enjoy just as much a dinner of roast mutton and rice pudding with the children while he is away. When Talleyrand had any very puzzling political problem to think of, he always reserved the consideration of it till after dinner, and especially found his brain very fine in its operations after he had partaken of truffles stewed in champagne. Now I venture to say, that the idea of a female Talleyrand is simply absurd.

Another way in which the stronger physical development of the man displays itself is in the love of muscular exertion. This is apparent even in the nursery, where little boys are far more given to climbing, jumping, and other rough sports than are their little sisters. Athletic exercises and out-door sports have always been more or less a passion among men, wherever there has been the least opportunity for indulging in them. Even a life of close confinement and hard work in the heart of a town cannot extinguish this innate feeling; and our lawyers and legislators, our men of fashion and men of business, are found in autumn on the grouse moors, in the deer forests, fishing Norwegian rivers, or scaling Alpine peaks. Those who have seen gentlemen cooped up in a country house, in bad weather, can understand the misery produced by the impossibility of giving free vent to the muscular passion; and the high spirits and hilarity, after a good day's sport, show how great is the pleasure derived from its gratification. Now of this physical craving women have

comparatively but little. Most of them can lead lives with a good deal of confinement contentedly enough; and they seem to thrive most when they have a multitude of small activities, which keep them stirring, without much exhaustion. Their physical constitution is, therefore, admirably fitted for the sphere of domestic duties. I have no doubt, also, that, in regard to watching and tending the sick, they are better qualified in body as well as in mind for the task. As men have not that quick compassion, gentleness, and sympathy that women possess, so neither, I imagine, could they so well bear up under the wearing irksomeness of attendance in a sick room.

I have now pretty much exhausted all I had to say on the moral and physical aspects of the feminine character. A very brief notice may suffice of it in relation to the intellect. In the drier studies, woman has certainly never excelled. They do not suit her, either morally or physically. The peculiar type of woman's mind makes her to take a great interest in persons, or in things as connected with persons. Whatever is disconnected from human interest, or only touches it very remotely, has no charm for her. She has, consequently, never been a votary of abstract studies. The general softness also of the bodily structure in woman, I fancy, affects the fibre of the brain, as well as the limbs and muscles. If this be the case, I should suppose the brain is not capable of that protracted, steady, laborious exercise which is required for success in those fields of intellectual exertion. A man requires a firm and hard constitution to lead the life of a scholar, to bear what Shakspeare calls "the burden of lean and wasteful learning;" and we need not wonder if the softer feminine frame is unequal to the task. Hence women have seldom attained any eminence in the drier studies, although in our own day we have one lady, Mrs. Somerville, distinguished for her knowledge of mathematics and the

physical sciences. As for a lady who excelled in metaphysics, the world has hardly ever heard of such a phenomenon. The fame of Hypatia rests very much on tradition. She lived in the fourth century, and is said to have taken rank with the first philosophers of her time. And we can name one or two, such as Miss Martineau, whose works have a great deal of masculine force about them. and a firm grasp of political and other principles.

In imaginative literature we should naturally expect women to attain more distinction than in the severer studies. The "dry light," as Bacon calls it, the *lumen siccum*, that is, scientific truth disconnected from human feelings, does not suit them well. But in poetry and fiction, those elements are provided with which they have most sympathy. Accordingly, we do find a considerable number of distinguished names in these walks of literature, most of which belong to rather recent times. In their writings, we see great knowledge of life, observation of character, and artistic skill. As compared with similar productions by men, the works of women abound more in pathos, and shew a deficiency in humour. I think it will, however, be acknowledged, that the dramatic power, which includes conception of character and representation of passion, has not yet reached such a fulness of force in any woman as it has in the great dramatists among men. In no feminine work is there either the intellectual breadth or the passionate depth of the great master-pieces of the art. Nor is it easy to conceive that a woman could ever attain to that comprehensive knowledge of all the phases of human life, nor that penetration into the more fierce and ferocious workings of our nature, which are necessary to the highest tragedy. A woman must preserve first her own proper feminine purity and reserve of character; and the exigencies thus arising seem to preclude her from hoping for the highest place in the dramatic art.

In lyric poetry, such as songs and ballads, women have displayed great aptitude and skill. Many of the sweetest and most exquisite pieces have flowed from their gifted pens, although there is not that concentrated force which marks the works of the stronger singers. Corinna, indeed, won the crown five times from Pindar; but her odes have not remained so as to enable us to compare them with those of the Theban eagle; and perhaps we should not be unjust in supposing, with Pausanius, that her sex and beauty may have biassed the judges in her favour. The most noticeable point in woman's poetry is the prevailing sadness of the tone. This goes the length of being a weakness. The Persian fable tells us that the nightingale's lay is so exquisite, because she leans her bosom on a thorn. And a great bard has said, of all the tuneful brotherhood,

They learn in suffering what they teach in song.

Certainly this seems to apply with peculiar force to the gifted sisters of the minstrel band, for their sweetest strains ring ever with the burden of sorrow.

In painting, in music, in the fine arts generally, women have accomplished much. A love for beauty seems to be natural to them. Yet that great originality which puts its possessor in the highest place, and which is so very rare a gift, has never yet fallen to their lot. Perhaps we may not err in concluding in general, that, as the strongest physical development belongs to man, so in that sex also are found the fortunate possessors of the largest brain.

This idea is, indeed, most vehemently opposed by John Stuart Mill, in his recent work on the *Subjection of Women*. He thinks that we are not yet in a position to come to any conclusion on the matter. We must allow ages of culture and freedom to be enjoyed by women before we can hope for the appearance of great original power among them; and have

no right to predict beforehand that it will never appear. For my own part, without entering into his reasonings at present, I shall only say that I think the world will have every reason to rejoice and be grateful if his views prove true, and it finds itself so much richer than it had hoped to be in the greatest endowments of humanity.

When we turn from literature to the practical affairs of life, I think our opinion of the ability of women will rather rise than fall. We have already remarked, that they cannot take their place openly in the great battle of the world. But they have great influence behind the scenes, and guide those actually engaged in the *melée*. I have no doubt that many a man has found his wife's advice of the utmost importance in the management of his affairs. She has kept him out of snares, and directed him to successes, by her mind, judgment, and inventive skill. And in what may be termed the social field, as distinguished from the commercial, the ability of women is often very conspicuous. From their natural tendency to occupy themselves much more with persons than with things, they acquire great penetration into character, and can often divine motives and detect secrets with wonderful power and skill. Besides their quickness in reading character, they have a tact in dealing with persons, a skill in contriving plans, and an unshaken resolution in carrying them out, which combination of qualities gives them an astonishing control over those around them. We read in an ancient amusing story, that the master passion in every woman is the desire to rule. This is doubtless a satire on the sex; but there is no doubt that a great many women do display a wonderful talent in ruling, and that not by insisting dictatorially on their wishes being carried out, but by bending circumstances to their aim, and swaying the minds of those they have to do with. Mrs. Oliphant, in a recent work of hers, remarks how kindly women have taken to the

task of governing kingdoms ; and I think it must be acknowledged that sovereigns such as Semiramis is said to have been of old, and like Catharine of Russia and Elizabeth of England in modern times, are to be classed in the highest rank of monarchs. If women have not reached the first place in art or literature, they have attained it in the line of sovereign power.

Perhaps we may now enquire what views are given us of women in literature or in current sayings ; and we may thus have a little further light thrown on our subject. We have first a great deal of poetry, in which woman is made the subject of the highest eulogy.

Angels are painted fair to look like you,

exclaims one bard ; and another replies,

On man she tried her 'prentice hand,
And then she made the lasses O.

The whole of love poetry celebrates woman in such rapturous terms that she must be, one would think, hardly short of a divinity. But let us remember, that the lover and the poet, like the madman, “are of imagination all compact.” The lover “sees Helen’s beauty in a brow of Egypt.” Much of love poetry has nothing whatever to do with character, and no lady of refined spirit would look on its amorous strains as being any compliment. Then its purer and nobler praise only proves that women do possess qualities that call forth the admiration and lay hold of the affections of men. But we do not get much to help us in our discriminative task. On the whole, we may draw a conclusion which slightly alters the lesson of an ancient fable. Had lions been the sculptors, groups of statuary would not have uniformly represented the man as conquering the lion ; and had women

been the poets, love songs would never have ceased to celebrate the beauties, graces, and perfections of men.

In strong contrast to the impassioned and rapturous praises of this kind of poetry, we have those satires levelled against women, in which scorn and hatred appear to have done their worst to dishonour and befoul them. The number of such satires has probably not been small; but woman has had her revenge on her detractors. Very few of these philippics have had a long lease of life. Their bitterness and foulness have made them odious to mankind, and they have soon perished. I have great doubts if a single one of them is ever read, except the one in *Juvenal*, which keeps its place as part of the works of a classic author. I do not know that even he has consulted his own fame in that revolting production of his pen; and though it may in some respects be valuable as a picture of Roman manners, we can hardly think well or kindly of the man who could produce it. Passing from such direct and ferocious attacks, we may observe that a good many cynical sayings are current about women, and a good many foibles are laid to their charge. Most of these have very little in them. We are told that women are very loquacious.

Hear the pretty ladies talk,
Tittle tattle, tittle tattle;
Like their pattens when they walk,
Pittle pattle, pittle pattle.

Well, why should they not give free scope to their lively temperament? I think the sound of their talking is rather agreeable, and the house must be a very dull one where you hear neither the chatter of women nor the prattle of children. If any crusty old bachelor has ears which cannot bear these vivacious noises, he ought to be condemned to live in that transatlantic region, where a man, not having seen a

woman for twelve years, took a walk of fifty miles to look at one through the window. Then women, we are told, cannot keep a secret. I think the only secrets they cannot keep are those which are made on purpose to be told. I have always found they could keep secrets well enough, of which they felt the importance. Let me remind you, that it was the barber of Midas who disburdened himself of his secret to the water-reeds, so that they proclaimed to the winds that Midas had the ears of an ass. As for that barber in the *Arabian Nights*, whose tongue could never rest for an instant, he must have had, at a moderate calculation, a hundred and forty woman power of talk. And I dare say we have all come across some trousered bipeds to whom the epigram would apply, written on a celebrated statesman.

Why is a pump like Viscount Castlereagh?

Because it is an upright thing of wood,

Which up and down its awkward arm doth sway,

And still doth spout and spout alway,

In one weak, washy, everlasting flood.

Byron remarks that

Sweet is revenge, especially to women.

Others tell us, that women have a great deal of cunning about them. Now, I have no doubt that there are particular manifestations of these qualities which are more peculiarly feminine. Cunning is the natural resource of weakness, and women may sometimes compass in that way what men would accomplish by main force. Again, women are naturally jealous of their rivals, and I dare say are not slow to avenge themselves on them. But I think it cannot be maintained that either of these qualities is more largely displayed in women than in men, when we call to mind the frightful stories of revenge we have heard of as perpetrated, especially

by certain races, such as the Spaniards or the Malays; or when we think of the pettifoggers, the usurers, the land sharks, and all the many orders of the family of Slyboots, who make this world their prowling-place. Again, curiosity is said to be very strong in women. We have all, I suppose, had this idea very deeply impressed on our minds in childhood by the veracious history of *Bluebeard*; and perhaps we may see a proof of it in the attendance of those ladies who have honoured the reading of this paper with their presence. As curiosity, however, or the enquiring turn of mind, lies at the root of all scientific progress, it is to be hoped that a Philosophical Society like ours will not too rashly condemn a feature of character to which it owes its own existence.

There are two things said about women which I shall mention without giving an opinion on them. One is a remark, frequently made by Thackeray, that they think most highly of those who treat them worst. A bully of a husband gets more esteem and reverence than the kindest of spouses. Now, I am always inclined to believe there must be some truth in whatever Thackeray says. But, whenever I have quoted this opinion of his to a lady, she has always indignantly denied it; and I have had no opportunity of confirming it from my own observation. The other saying is, that women, who once become intemperate, can never be reclaimed from that frightful vice. I must confess I am exceedingly unwilling to believe that this can be true. We know that benevolent enterprises have been most earnestly carried on for reclaiming the fallen; and these surely could have little hope of success if there were so iron a barrier to prevent a return to sobriety. If there be any truth in the statement, I should think the fact arose, not from any inherent deficiency of self-controlling power, of which women often prove they have no small share, but from the peculiarity of the nervous system, which makes the

disease of dipsomania take firmer hold. I am glad, however, to learn from our President, that in his ample medical experience, he has had more frequent proof of reformation in female drunkards than in male.

In reference to the vices that women may display, I would just quote the Latin saying—*Optimi corruptio pessima*. The worst corruption of all is the corruption of that which was best. The degradation of woman is in proportion to the grace and loveliness which were originally hers. If one were, however, to follow out enquiries into that not very pleasant, and very far from wholesome, subject, the degradation of human character, I am inclined to think that woman never sinks to any level to which man does not accompany her; and that in the lowest deep, he finds for himself a lower deep.

Perhaps there is nothing in literature that aids us so much in forming just and adequate notions of the feminine character, as those delineations which are given us in the works of the great dramatists, and others of kindred genius. No doubt these heroines are imaginary persons, but the characters bestowed on them are drawn from nature. It seems to be a much rarer gift to portray female characters than those of the other sex. Sir Walter Scott has produced many most admirable portraiture of men, but, with one or two exceptions, his heroines are an insipid race. In this, as in other respects, no one else approaches that astonishing genius—

Who was not of an age, but for all time,
Within whose circle none could walk but he.

The Shakspearian gallery, besides its crowd of varied figures of the bearded gender, representing every phase of life and style of man, contains also a most admirable group of the sweeter sex; all drawn with the most discriminating

touch, full of life and grace, and each one adorned with her own especial attributes. No man probably ever possessed so fine an insight into the depths of the female spirit as did our illustrious countryman. But we may say in general, that the most gifted and sweetest poetic minds have best understood and most appreciated woman's nature. Perhaps one reason is, that the poets have themselves a touch of the feminine character. This is a very different thing, indeed, let us mark, from being effeminate. Effeminacy indicates unmanly weakness, and is a word of blame. But when we say of a man that he has something feminine in him, we mean that he has fine perceptions, quick sensibilities, tender feelings. Perhaps we may mean further, that there is a tendency to cling closely to beloved objects, and a great craving for sympathy and affection. When these things are superadded to truly manly qualities, to comprehensive knowledge, just judgment, and firm will, we obtain a very rich and beautiful style of character, combining the strength of the one sex with the choice graces of the other. In regard to women, on the other hand, the expression "a masculine woman," is by no means one of praise, and indicates coarseness of mind and manners. But the noblest women have always a large endowment of manly qualities. Not otherwise could they come up to the full realisation of what Wordsworth describes, in his exquisite lines referring to his wife, when he speaks of her as possessing

The reason firm, the temperate will,
Endurance, foresight, strength, and skill.
A perfect woman, nobly planned,
To warn, to comfort, to command.
And yet a spirit too, and bright
With something of an angel light.

In the works of more recent years, the question of woman's nature is often touched on; and one poem, by our

illustrious laureate, is consecrated to this subject, some of the exquisite passages in which I have quoted in this paper.

Having now passed in review all the various elements constituting character, we may ask whether we have found woman to differ from man in quantity or in quality of character, or in both. That she differs only in quantity, is the idea expressed in these lines from Tennyson's *Locksley Hall*.

Nature made them blinder motions, bounded in a narrower brain;
Woman is the lesser man, and all thy passions, matched with mine,
Are like moonlight unto sunlight, or like water unto wine.

There can be no doubt that woman does differ from man in the mass or amount of what she is gifted with; or, to speak more justly, in the means she possesses for conspicuously developing what is in her. Both in her physical constitution, and in her social position, she finds barriers to the proper outcome of her spirit's powers. But these things should be taken into account in judging of her. The bravest generals could sometimes accomplish nothing, because their forces were too weak. The poor widow who cast into the treasury the two mites, which make one farthing, was declared, by One who could not err, to be far more generous than the rich man who cast in much. And doubtless, in a thousand unknown stories of woman's life, qualities have been manifested in a small and humble sphere, which match the most illustrious displays of human excellence in real worth. And in another sphere of being, when the limitations of this fleshly frame shall cease to imprison the ethereal tenant, it may be found that some of the mightiest and noblest spirits were those which had borne on earth a woman's destiny. I think, however, the conclusion to which our investigations have conducted us, is that the feminine character differs qualitatively from that of man. All the

component elements are indeed the same, but in woman they are differently proportioned; and the religious feelings, the kindly affections, the tender sympathies occupy a comparatively larger space. She has less of the self-relying elements, and more of the confiding and self-attaching. She is better adapted for a private than a public life. Her proper place is not in the thoroughfares of the world, but under the shelter of home. Woman is not thus the repetition of man, but the complement to him. Neither man nor woman alone represents the perfect image of humanity; but they must be taken together before we can arrive at the full and true conception. We see in them respectively the two phases of our nature; and find its completeness in their union.

For woman is not undeveloped man,
 But diverse. Could we make her as the man,
 Sweet Love were slain. His dearest bond is this,
 Not like to like, but like in difference.
 Yet in the long years liker must they grow:
 The man be more of woman, she of man.
 He gain in sweetness and in moral height,
 Nor lose the wrestling thews that throw the world;
 She, mental breadth, nor fail in childward care,
 Nor lose the childlike in the larger mind.
 Till at the last she set herself to man,
 Like perfect music unto noble words.
 And so these twain unto the skirts of Time,
 Sit side by side, full summed in all their powers,
 Dispensing harvest, sowing the To-be,
 Self-reverent each, and reverencing each,
 Distinct in individualities,
 But like each other, even as those who love.
 Then comes the statelier Eden back to man.
 Then reign the world's great bridals, calm and chaste.
 Then spring the crowning race of humankind.

In conclusion, we remark, that the result of woman's life is not to be found in works she herself achieves, but in what

she influences others to accomplish. The fruit of her spirit's throes is to be looked for in the life of other spirits. The two great relations in which she puts forth her power, are in regard to the child and to the man. The babe, which lies in her bosom, takes the shape and colour of its little being from what she is herself. The lineaments of the mother's soul are stamped upon the tender substance committed to her charge. How much have some of the greatest and the best of men acknowledged themselves to have owed to a mother's training? How unspeakably affectionate, how tender, how wise, has that training been! What self-sacrifice, what thoughtfulness, what absorbing devotedness have been spent on the beloved task, with no hope nor wish for reward, except in the delight of seeing those little feet tread the ways of Wisdom and of Virtue. In estimating the greatness of woman's work, let us not forget that her spirit has lived and wrought in the noblest workers and the mightiest deeds the world has ever seen.

Alone, I said, from earlier than I know,
 Immersed in rich foreshadowings of the world,
 I loved the woman. He that doth not live
 A drowning life, besotted in sweet self,
 Or pines in sad experience, worse than death.
 Or keeps his winged affections clipt with crime.
 Yet was there one through whom I loved her. One
 Not learnèd, save in gracious household ways;
 Not perfect, nay, but full of tender wants.
 No angel, but a dearer being, all dipt
 In angel instincts, breathing Paradise;
 Interpreter between the Gods and men.
 Who looked all native to her place, and yet
 On tiptoe seemed to touch upon a sphere
 Too gross to tread; and all male minds, perforce,
 Swayed to her from their orbits as they moved,
 And girdled her with music. Happy he,
 With such a mother; faith in womankind

Beats with his blood; and faith in all things high
 Comes easy to him; and, though he trip and fall,
 He shall not blind his soul with clay.

Besides her influence on the child, and the blessed task she thus accomplishes, woman has another great relation to the labourers in earth's field, the warriors in life's battle. This is her relation to the man, whom she brings under the sway of her own peculiar influence. And her proper place is to call out all that is best and purest, most tender and most generous, in his ruder nature. The finest qualities in man are developed under the influence of woman. Her office is, in herself to supply the ideal for which man's spirit hungers; to be herself that pure and lovely thing which can content the aspirations of the manly heart. If not herself the poet, she is to supply the poet with his theme; and in Petrarch's *Laura*, and still more in Dante's *Beatrice*, do we not see how her power penetrates to the inmost, profoundest depths of earth's mightiest spirits? If not herself the hero, she awakens the bosom to heroic aspirations, and nerves it to heroic deeds.

Thy voice is heard through rolling drums,
 That beat to battle where he stands;
 Thy face across his fancy comes,
 And gives the battle to his hands.
 A moment, while the trumpets blow,
 He sees his brood about thy knee;
 The next, like fire he meets the foe,
 And strikes him dead for thine and thee.

In contemplating woman's lot from the point of view we have as men, our feeling is a mingled one. We are moved, perhaps, at once to pity and admire. I cannot think it possible that any man could desire to be under the same rules of destiny. We have a self-asserting instinct which

runs in our blood, and seasons the very marrow of our bones. Every man has his ambition. He chooses his field and work, and toils for his reward. And to him it seems a hard and dispiriting thing to be shut out from life's eager contest, and to have no hope of winning its shining prizes. Woman's lot is to love and toil, to hope and strive, in secret, that others may conquer in the fray, may snatch the guerdon and wreath their brows with the garland of renown. It seems, perhaps, a hard and not to be wished-for destiny. But let us remember, that the noblest lesson humanity has ever learned is that of self sacrifice. To toil, not for ourselves, but that others may be blessed; to be content to suffer and to be forgotten, if so be that some heart is bettered by our sorrow, and some life brightened with a purer lustre; if this be the mark of woman's lot, may we not say that in its best developments it approaches nearest to the perfect glory of humanity's great ideal?

TENTH ORDINARY MEETING.

ROYAL INSTITUTION, 7th March, 1870.

JOHN BIRKBECK NEVINS, M.D., PRESIDENT, in the
Chair.

Mr. Thomas Brandon was unanimously elected an Ordinary Member.

The President referred to the recent premature death of Captain Edward Berry, Commander of the ship *Richard Cobden* (the first iron-built ship), and the loss the Society had thereby sustained, Captain Berry having been one of the most active of its Associates.

Captain Berry was a native of Devonshire, and for the last eight years has been an ardent collector for the Museum. During that time he has brought home and presented a considerable number of specimens of birds, fishes, and marine invertebrata. Among the last were two species new to science—one being a beautiful sea urchin, described and figured by Dr. Gray as *Spatangus variegatus*, and the other a large marine annelid, described by Dr. Baird under the name of *Serpentaria Berryi*. Both of these are recorded in the Proceedings of the Zoological Society of London for 1866. Examples of *Sphenopus marsupialis* (a rare species of Zoanthinæ), taken by Captain Berry at Pulo Paya, in the China Seas, are also figured by Dr. Gray, in the Proceedings of the same Society for 1867. In 1868, Captain Berry brought home a large collection of fish from Kurrachee, and in 1869, a smaller collection from the Irrawaddy, which,

with other specimens obtained by him, were brought from time to time before the Society. He was proud of the honour of being elected an Associate, and was eager to possess the Society's annual volume of Proceedings. He died in Liverpool on Sunday, the 27th February, 1870.

Mr. Morton, F.G.S., exhibited some interesting specimens of fossil wood and shells, from hæmatite deposits worked in fissures in the Coniston limestone, near Ulverstone. The fossils are clearly of the carboniferous age, and seem to have drifted into the fissures when in a recent condition.

Mr. Higginson exhibited, on behalf of Captain Donald Chisholm, a remarkably fine right upper molar tooth of the Indian elephant. The tooth measured thirteen inches in length and eight inches in depth, showed nineteen lamellæ, weighed sixteen pounds, and had not yet cut the gum, being quite unworn. It was intended by Captain Chisholm as a donation to the Free Museum.

Mr. T. J. Moore exhibited the following specimens from the Free Museum:—A fine specimen of the Sting Ray, or Fire Flaire (*Trygon pastinaca*), taken by a Liverpool fisherman at the entrance of the Mersey in August, 1869. The specimen was remarkable for having two serrated barbs in the tail, as usually there is only one. Two other specimens of this rare fish had been brought to the Museum by Liverpool fishermen within the last year or two. Also a mounted skeleton of Pallas's Snake-lizard (*Pseudopus Pallassii*) of Dalmatia, to show the rudimentary limbs, no indications of which are to be seen externally. Also specimens of *Orbitolites*, and a splendid example of *Cycloclypeus*, rare Foraminiferæ, dredged in sixty fathoms water off Recruit Island, by Dr. Collingwood (as recorded in his *Rambles of a Naturalist on the Shores and Waters of the China Sea*, p. 126). These specimens were lately presented to the Museum by

Dr. Collingwood, together with forty-six skins of birds, two young Megapodes or mound-making birds, the skull of a wild pig (*Sus taiwanus*), two specimens of the largest known Nudibranch (*Doris exanthemata?* of Kelaart), six shells of the genus *Oliva*, and other specimens collected by him in the voyages recorded in his work above mentioned.

A variety of miscellaneous subjects of scientific interest also came under discussion; and Mr. Davies, F.C.S., being asked by a Member if there was any reliance to be placed upon the paragraph in the newspapers concerning the manufacture of butter and other fatty matter out of Thames mud, ridiculed the notion, and said that in all such statements, ninety-five per cent of them were wrong in their chemistry, and the remainder were simply untrue.

Dr. Drysdale then read a long and interesting Paper on the "History of the Theory of the Conservation of Force," which was followed by the usual discussion, after which the Meeting was adjourned.

ELEVENTH ORDINARY MEETING.

ROYAL INSTITUTION, 21st March, 1870.

JOHN BIRKBECK NEVINS, M.D., PRESIDENT, in the
Chair.

Messrs. P. B. M'Quie and Edward Edwards were unanimously elected Ordinary Members.

A communication was received from the Council recommending a grant of £5 to the fund now being raised for the family of Professor Sars, of Christiania, who has rendered distinguished services in the cause of science by his researches in marine zoology. The recommendation was adopted, for the first time, on the motion of the Rev. H. H. Higgins, seconded by Mr. Thos. J. Moore.

The Rev. H. H. Higgins exhibited a case of spiders, all of which had been collected in the neighbourhood.

Mr. Alexander Norman Tate then read a Paper "On Scientific Evidence in Courts of Law," which was followed by a lengthened discussion, after which the Meeting was adjourned.

TWELFTH ORDINARY MEETING.

ROYAL INSTITUTION, 4th April, 1870.

JOHN BIRKBECK NEVINS, M.D., PRESIDENT, in the
Chair.

Messrs. James Smith, John Waugh, and Hubert Kenion were unanimously elected Ordinary Members.

Mr. T. J. Moore brought before the Meeting the following:—Fine specimens of fossil plants (*Palæopteris Hibernicus*, *Sagenaria Bailyana*, *Cyclostigma Kiltorkense*, &c.), from the upper old red sandstone at Kiltorcan, county Kilkenny, presented to the Free Museum by the Council of the British Association, per Mr. W. Hellier Baily. Life-size drawings of a young specimen of the Lamantin (*Manatus Senegalensis*?). These drawings had been carefully made by Mr. J. Chard, Museum Draughtsman, from a specimen recently presented to the Museum by Mr. R. B. N. Walker, Corresponding Member of the Society; also the shoulder blade (*scapula*) of a Greenland (?) whale (*Balæna mysticetus*?). This bone, the property of Messrs. Macfie & Sons, had been found while excavating for a foundation under the cellar floor level of some cottage property in Orange Street, in February last. It was evidently part of the cargo of one of the whaling ships which formerly sailed from Liverpool.

The following Paper was then read.

ANCIENT AND MODERN MUGGLETONIANS.

BY ALEXANDER GORDON, M.A.

ON the evening of the 14th of February last, while the members of this learned society were enjoying the bounties of providence at the Alexandra Hotel, the writer of the following paper was hospitably entertained by the Muggle-tonians of London, at their chief annual festival. During the week which followed, he was kindly permitted to examine and arrange the curious store of manuscripts in the possession of this singular community. Having thus so recently imbibed from Muggle-tonian sources, both classical and convivial, he may, perhaps, be allowed to plead the fact as his excuse for once more thrusting the present subject under the notice of the Literary and Philosophical Society of Liverpool.

At the outset it is necessary to state, that the much greater accumulation of materials than was anticipated has compelled the omission of whole sections of the subject. There is no room here for any discussion of the principles of Muggle-tonian philosophy and theology. This part of the inquiry will, accordingly, be left precisely in the condition in which it was left on a former occasion. It would scarcely be possible to enter satisfactorily into any such discussion, without trespassing into a region marked "dangerous" by a very salutary law of this Society.

Let it be assumed, then, that the Society is in possession of the Six Cardinal Principles of Muggle-tonianism, viz.,

1. That God and the Man Christ Jesus are synonymous expressions.

2. That the Devil and Human Reason are synonymous expressions.
3. That the Soul dies and rises again with the Body.
4. That Heaven is a place above the Stars.
5. That, at present, Hell is nowhere, but that this Earth, darkened after the last Judgment, will be Hell.
6. That the Angels are the only beings of Pure Reason.

Let it also be assumed that the Society will recollect by what reaction from the pantheistic spirit which Muggleton detected in Jacob Behmen, in the Ranters, and in the Quakers, these Six Principles were evolved and shaped. And now let us proceed to resume the thread of the historical narrative.

The result of further researches has been very much to confirm the impression that the main interest of Muggletonian history, both theological and biographical, is to be found at its outset, and is concentrated in the personal career of the honest London tailor, whose name is identified with the system which his cousin Reeve claimed to have received by immediate revelation from heaven.

We have traced already the early history of these two men, and brought them to the point of their joint appearance in the world of London as prophets of the Lord, "Witnesses of the Spirit," as they most commonly call themselves. This was in the spring of 1652. In the ferment of conflicting religious opinions which then agitated the mind of London, the new prophets were sure of a hearing, at least for a time. The crowd that had listened to John Robins, and wondered at Thomas Tany, quickly gathered round Reeve and Muggleton. "There came," says the latter, "a many people to discourse with us, and asked questions about many things in matters of religion, and we answered them to all questions whatsoever could arise out

of the heart of men. Some few were satisfied and believed ; and many despised.”*

To place their position in a more definite form before their admirers, John Reeve, assisted by his cousin, wrote an account of his illumination, and of the leading principles of his doctrine, which he termed *A transcendent Spirituall Treatise*. It was printed, but not published, for fear of the ordinance against blasphemy ; indeed it would have been impossible to obtain a license for its publication. The crowded title-page bears upon its face, among other matters, this advertisement — “ If any of the Elect desire to speak with us concerning anything written in this Treatise, they may heare of us in Great Trinity Lane, at a Chandlers shop against one Mr. *Millis*, a brown Baker, neer the lower end of Bowlane.” The address here given is that of Muggleton’s private residence. This work is usually referred to by the title of the *Commission Book*, and is regarded as containing the credentials of the writers. On the truth of its statements they base their authority. “ Many people,” we are told, “ were more offended at the doctrine therein, than at the Commission ” † itself, *i. e.*, at the power of declaring men saved or damned according to their faith. It was not to be supposed, considering the temper of those days, that the two Commissioners should be allowed to proceed on their way without some annoyance and persecution. Persons who had been “ sentenced,” hooted after John Reeve in the streets, “ There goes the Prophet that damns people ! ” Little boys pursued him through Paul’s Churchyard with the cry “ Prophet ! Prophet ! ” and threw gravel and stones at him, till he took refuge within the sacred walls. One Mrs. Turner, whose husband it seems was willing to go with the Prophet, being “ exceeding wroth, and fearful that her

* *Acts of the Witnesses of the Spirit*, 2nd edition, 1764, p. 48.

† *Ibid.*, p. 49.

husband would be brought into trouble by it, said, if John Reeve came again to her husband, that she would run a spit in his guts." A certain Mr. Penson, in the course of a discussion with Lodowicke Muggleton, broke out at length, "'Wilt thou say I am damned to eternity?' 'Yea,' said I, 'thou art.' Then he rose up, and with both his fists smote upon my head."*

These were minor vexations. The serious troubles of the Witnesses did not begin till their enemies contrived to bring them within reach of the law. At first it seemed difficult to do so. As Lodowicke Muggleton sagaciously observed, on more than one occasion, "they could not tell what to do in it, seeing there was no law against any man for saying a man is damned."† A charge of witchcraft was suggested, but nothing came of it. And meanwhile the two cousins were making converts, and converts of some position. Among these were one Jeremiah Mount, a young gentleman of means (of whom one would like to know more—there are some letters of his in the Public Record Office which seem to imply that he got into political trouble in 1663); Captain Clark, a friend of Mount's; Captain Stasy, in the Parliamentary service; and Richard Leader, a rich New England merchant, "and a great traveller into many parts of the world; he was a religious man, but had somewhat declined the outward forms of worship, because he could find no rest there; so he applied his heart more to philosophy and the knowledge of nature than religion, for he thought he had seen the utmost of religion, and that there was nothing in it."‡

At length, in September 1653, a clergyman named Goslin, a "Cambridge scholar," as he is termed, an excise-

* *Acts of the Witnesses, ut supra*, pp. 49, 43, 50.

+ *Ibid.*, p. 85. ‡ *Ibid.*, p. 58.

man named Ebb, a shopkeeper named Chandler, and two soldiers whose names are not given, having procured a copy of the *Transcendent Spiritual Treatise*, and being armed with other evidence, joined together to obtain a warrant against Reeve and Muggleton, in the Lord Mayor's court, on a charge of blasphemy in denying the Holy Trinity. After a month's durance in Newgate Jail, they were brought to trial, before the Lord Mayor, Sir John Fowke, found guilty, and committed to the Old Bridewell for a term of six months. They give but a doleful account of their prison fare. Of Newgate, for example, they say, "the boards were our bed, we had no sheets, only a poor flock bed upon the ground, and one thin blanket at top; and we paid seven groats a-week for this lodging, and thought ourselves very well used in a prison, which thing we were never acquainted with before. But we were more perplexed with the prisoners within than with the imprisonment itself." A very ludicrous and graphic account is given of violence and mischief which prevailed within Newgate walls. When Muggleton went to the gates to speak with any, the boys would snatch off his hat, and "pawn it for half a dozen of drink." Three wild highwaymen actually tried to hang poor John Reeve, with a rope tied to the beam of his cell. Nor was their importunity much more reasonable than their malice; one poor prisoner, when he got very drunk, would kneel down on his knees and say, "For Jesus Christ's sake, John Reeve, bless me, for I am a wicked sinner." Nothing like order was maintained in this miserable hateful den till the keeper employed "four condemned and convicted men" to act as underkeepers, and to help him to "shut up the prisoners every night."* In spite of the ill-treatment they suffered, our friends did not lie idle in their prison: they wrote and printed Letters and Re-

* *Acts of the Witnesses, ut supra*, pp. 73, 75.

monstrances, addressed to the Lord General Cromwell, to the Lord Mayor, and to the clergy in and about London. After leaving Bridewell, in April 1654, John Reeve composed "that spiritual and heavenly treatise, entitled *A Divine Looking-glass*, and he got it printed in the year 1656. Jeremiah Mount was at the greatest part of that charge. But the printer, being knavish and covetous, quite spoiled it in the press; he huddled it up so close together, for want of more paper, that nobody had any delight to read it through; so that it never yielded the money it cost printing."*

This was nearly John Reeve's last work. His life had a plaintive close. He went to pay a visit in 1656 to some friends at Maidstone; but here, in consequence of his passing sentence of damnation on certain persons who despised his Commission, they got a constable to apprehend him; but having timely notice of it he left in haste, and "overheated his blood with travelling to the water side, which was sixteen miles, and he went upon the water at Gravesend when he was all in a sweat, and cooled himself too soon. So he surfeited his blood, and drove him into a consumption, which killed him. He lived almost two years afterwards, but in a sick, wasting condition."† Some of his letters, written at this time, contain touching references to his poverty and ill-health. Unable to work at his trade, he was dependent on the contributions of his friends, who, he complains, "make no enquiry after me, whether I am dead or alive. I still continue very sick and weak, so that of necessity I must either mend or end in a little space."‡ His wife was also an ailing creature, and died before him, on the 29th March 1656.§ When she was gone, he had his dwelling with three

* *Acts of the Witnesses*, ut *supra*, p. 78.

† *Ibid.*, p. 79.

‡ *Supplement to the Book of Letters*, 1831 pp. 1, 2.

§ This date, 1656, may be strongly suspected to be an error, and should doubtless be corrected to 1658. Reeve had a daughter, for we are told (*Sp. Ep.*,

sisters, Mrs. Frances, Mrs. Roberts, and Mrs. Boner, who kept a sempstress' shop in Bishopsgate Street, near Hog-lane End; and in their house he died, "about the latter end of July 1658, in the seventh year of the Commission, and in the forty-ninth year of his life."* He was interred in Bethlehem Churchyard, an extinct burying ground, the site of which is to be looked for in Liverpool Street, opposite the Broad Street Station of the North London Railway.

His health probably never had been robust, and this gave a plaintive tone to his religion, very different, even on points in which their opinions altogether coincided, from the vigorous self-assertive spirit of his coadjutor and cousin. A remarkable illustration of this divergence of temper, or rather of nature, may be formed by comparing the relations they severally held to a distinguished religious writer of their time, with whom each came into controversy at different periods. John Reeve had seen and read a volume entitled *Divine Essays*, written in 1654 by Isaac Penington, the younger, before he joined the Society of Friends. He entered into correspondence with Penington in 1658, on the subject of this book, and addressed an Epistle to the Earl of Pembroke on the same topic. Reeve's language throughout is modest, tender, anxious, and conciliatory; to Penington he says, "though this everlasting Light have not clearly manifested itself in thy soul at present; yet because thou mayest enjoy it in due time when the Holy Spirit presents the super-excellency of it unto thy spirit, therefore suffer me to write a little of the effects of it in my own soul;" and to the Earl of Pembroke he writes, "I would not willingly wear out your patience with superfluity of words: Oh! bear with me a

p. 114) that "John Reeve's wife and his daughter did get most part of his living. One Ann Adams, who afterwards married William Cakebread of Orwell, is spoken of as 'his handmaid to guide him to friends' houses.'" (*Ibid.*, p. 530.)

* *Acts of the Witnesses, ut supra*, p. 80.

little, I humbly beseech you, and conceive it to be from the love of the Divine Voice of God himself, our Lord Jesus Christ, in sending me unto you and all of your sweet and tender spirit.”*

Many years after, in 1668, Isaac Penington, who had by this time been nearly twenty years a member of the Society of Friends, published *Observations on some Passages of Lodowick Muggleton*, a pamphlet to which Muggleton replied, in an *Answer to Isaac Pennington, Esq.*, couched in an exactly opposite style to that which Reeve had adopted. “I do remember,” he says, “several letters of yours to John Reeve, and of his unto you ; some are yet to be seen ; and this I say, your language was then very high, only it was groundless ; and I suppose you had no faith in what you writ yourself ; if you had, sure you would not have left that high language, and have fallen to the silly Quakers’ principles, where there is neither head nor foot, bottom nor top.” His criticism of Penington’s *Observations* is full of asperity, and he presents his own doctrine in its severest and hardest form, so that one is quite prepared to find the *Answer* closing with the sentence of damnation. He adds (and doubtless with truth), “I give not judgment on you out of any malice or hatred, but had rather you had been quiet and still, as you have been many years, since you wrote to John Reeve ; if you had not written to me against me and my revelation, I should have let you alone, for I never did judge any man or woman till they did judge me first.” Yet Penington’s tone was so far from being harsh, that he had expressly said, at the close of his *Observations*, “Now as for him (notwithstanding all he hath done against the Lord, and against his people), so far am I from wishing any harm unto him, that I could wish with all my heart that it were

* *Sacred Remains*, 2nd Edition, 1752, pp. 44, 51.

possible for him to come to a true sense of the true light of God's Holy Spirit." It is very characteristic of the two Witnesses, that Reeve met and accosted such a man with a pleading persuasion, whereas Muggleton strode over him with an imperious dogmatism.

Notwithstanding his sickness, John Reeve had written, in his last hours, a book called *Joyful News from Heaven*, or *The Soul's Mortality proved*—strange work, it may be thought, for the deathbed of a man who was certainly religious. By mortality, however, as applied to the soul, Reeve was far from intending absolute extinction without possibility of revival; he meant what has sometimes been called the sleep of the soul. He held that soul and body perish together, and will, at the end of time, together rise; a doctrine entertained apparently by some of the Early Fathers of the Church; a doctrine at any rate by no means uncommon in this country; for, not to speak of such heretical communities as the Soulsleepers in the seventeenth century, the Unitarians of the school of Priestley in the eighteenth, and the Freethinking Christians in the nineteenth,* or such wayward thinkers as Richard Overton, Henry Layton, and William Coward, M.D., it may be sufficient to point out as advocates of the doctrine the well known names of John Milton, Thomas Hobbes, Henry Dodwell, Archdeacon Blackburne, Edmund Law, Bishop of Carlisle, and the late Bishop Hampden, of Hereford. Nay, it is not without significance, that of the original Forty-two Articles of Religion, published by royal proclamation in 1552, Article XL., against those who said "that the souls of such as depart hence do sleep, being without all sense, feeling or perceiving, until the day of judgment; or affirm that the souls die with their bodies, and at the last day shall be raised up with the same," was

* A small Scotch sect, called the Christadelphians, or Brethren of Christ, who have a meeting-place in Edinburgh, hold this view.

expunged by Convocation in 1562, which thus refused to condemn the opinion.

Reeve spoke of this doctrine by the name of the mortality of the soul; an appellation which *primâ facie* gives a false impression. He might almost as reasonably have called it the immortality of the body; since what he actually believed was that soul and body are found only in union, and disappear and reappear together. Of their reappearance he had no manner of doubt, though, strictly speaking, the body that rises is not the identical body that dies. When the death-sleep is over, "the soul quickens," and a spiritual body arises, shaped like the first. On awaking, death will seem but the sleep of a quarter of an hour, or the interval of a moment.

After John Reeve was dead, Lodowicke Muggleton had a clear field for the assertion of his own undivided claim to the prophetic function, and he was not slow to make use of it. It is curious to notice how, even during their joint lives, the more powerful nature of Lodowicke had gained its own way in the shaping of the system which Reeve's Commission had originated.* "You say," he writes to Walter Buchanan, in 1671, "I contradict John Reeve. To this I say I have power to do so, and I had power so to do when he was alive, and did contradict him in something when he was alive; and John Reeve wrote somewhat that was error to me, and error in itself, which I did oppose him in to his face, and he could not deny it. And yet, notwithstanding, John Reeve was infallible, and did write by an unerring spirit. This will seem a riddle, except it be unfolded thus. As to the doctrinal part contained in our writings, the Six Principles were written by an unerring infallible spirit in John Reeve, and the interpretation of Scripture written by him was infallible; but John Reeve's experience and apprehension of God's

* Penn asserts (*New Witnesses*, p. 62), that Muggleton told him he thought Reeve "hot brained and distempered in his head."

taking immediate notice of every man was an error . . . as I did prove to his face.”*

This difference of opinion, in which Reeve gave way to Muggleton, was a singular result of their strange boldness in conceiving of God as strictly humaniform, even as to shape and size. Said Reeve, in his epistle to the Earl of Pembroke, “The Creator is no such vast bodiless spirit as you have described him to be . . . he is a glorified body of flesh and bone in the likeness of a man; and the compass and substance of his glorious substance is no bigger than a man is, and the essence of it is but in one place at once. Only take notice of this, that his little eyes are so transcendently bright and glorious, that at one look or view they pierce through heaven and earth, angels and men; and at once, or one word speaking through his heavenly mouth, it entereth (if it be his pleasure) into all the spirits of men or angels.”* Reeve therefore held, in a form appropriate to his peculiar theology, the common doctrine that God exercises an immediate oversight on all human actions. Muggleton, on the other hand, affirmed that God takes notice of human actions only in virtue of “his law, written in every man’s heart, both saint and devil, and no otherwise.” Further, he affirms that “whoever doth not act well, by that law written in his heart, and doth not stand in awe of that, and fear to offend that law of conscience as if God himself did stand by, all his well-doing is but eye-service, and respected of God no more than the cutting off a dog’s neck.” “Neither,” he adds, “do I refrain from evil for fear of God’s Person seeing me, and because he seeing me will punish me; but I refrain from evil because the law written in my heart seeth all my doings, so that God need not trouble himself to watch over every man’s actions himself, for he hath placed his Law a watchman in

* *Stream from the Tree of Life*, 1758, p. 13.

* *Sacred Remains*, *ut supra*, p. 56.

every man and woman, to give notice of all their doings, whether good or evil.”* Reeve unreservedly deferred to his cousin’s judgment on this point, yet it must, I imagine, have gone severely against the grain with him.

The doctrine that God takes no immediate notice has proved a test of orthodoxy and a fertile source of division among the Muggletonians from that time to this. It has created that which forms the greatest outward distinction between them and other sects—the entire abandonment of prayer as a spiritual access to God; and indeed the abolition of formal worship of any kind. Reeve himself was by no means disposed in all cases to charge the practice of prayer with weakness or profanity. “I do not,” he says, “in the least deny the use of the tongue in prayer, and praises also, so that a man be undoubtedly moved thereto by the true light of the righteous Judge of quick and dead; but glittering words, flowing from natural parts only, in merciless men, are an abomination to our God and his tender love in our new-born people.”† Indeed there are on record some short prayers of his, and of Muggleton’s too, dispersed through their works. Nor was there in the first instance any injunction laid upon Muggletonians to abstain from frequenting the usual places of public worship. “I never did,” says Muggleton, “forbid any believer of this Commission of the Spirit to go to church; neither did John Reeve in his time; they all went to church, or to meetings. But [in his *Interpretation of the Book of Revelations*, 1665,] I had occasion to write concerning worship, and, the believers reading it, their eyes were opened to see it was idolatry to worship as the nation doth, so that many of them refrained from it. Some could not refrain because of persecution; but those that did refrain had much peace in themselves, and were better beloved with

* *Stream from the Tree of Life*, ut supra, pp. 2, 3.

† *Sacred Remains*, ut supra, p. 46.

me than the other; they that did go to worship had shame and trouble and doubting in themselves, and I let them bear their sin and never reprov'd them for it."* At the present day strict principle induces Muggletonians to forego any attendance upon public worship, even at such occasional services as a funeral or a marriage. And in the few isolated instances in which Muggletonians indulge in the private use of prayer, the habit is regarded by their fellow believers as an inconsistent eccentricity, the sign of an immature, and so far imperfect faith.

It is odd enough, therefore, to find a caustic and amusing writer, one of whose clever books has just been reproduced, selecting the Muggletonians as extreme advocates of an exactly opposite opinion, viz., the doctrine of a particular providence. Somewhat clumsily says the *Tin Trumpet*: "Fanatics, whose inordinate conceit prompts them to believe that the Deity must be more engrossed with the affairs of an obscure Muggletonian in Ebenezer Alley, Shoreditch, than with the general and immutable laws of the universe, presumptuously wrest every unexpected occurrence in which themselves are concerned into a particular Providence, more especially if it be an escape from any kind of danger." And again: "Even a Muggletonian would hesitate at calling this a providential intoxication." Yet a third time: "We submit this accident to the joint and serious consideration of the Muggletonians and Phrenologists."†

Though Muggleton managed to secure his own way in the community of which he was now the sole head, it was

* *Acts of the Witnesses, ut supra*, p. 147.

† *The Tin Trumpet*, published 1836, republished 1869, pp. 7, 8. Horace Smith evidently makes use of the name in entire ignorance of its history, simply for its odd sound; just as Douglas Jerrold in *Nell Gwynne, or the Prologue* (1833), makes Mrs. Snowdrop say—"Nothing now will serve her but to go upon the stage. 'Tis n't my fault; I'm sure I put the pious Mr. Muggleton under her pillow every night."

not without opposition that he did so. His first rival arose very shortly after John Reeve's death.

At the beginning of February, 1658, the Rev. LAURENCE CLAXTON appeared in London. This Laurence Claxton describes himself as a beneficed clergyman of the Church of England, holding a small living of £100 per annum. He was now forty years of age, and had a family of five children dependent on him. Although a parish priest, he seems to have been one of that numerous class who in those days were on the look out for a religion, Seekers or Waiters, as they modestly called themselves. He had been attracted by the pantheistic teaching of the Ranters, and was in the habit of preaching in this strain himself. He came to London, because he had been informed that the two Witnesses, mentioned in Revelations xi., were now to be seen and spoken with; and he was anxious to hear what they could say for themselves. John Reeve lent him one of his books; and this made a deep impression on him. "For the space of three weeks," he says, "I could not be at quiet, sleeping nor waking, going nor riding." He decided at last, after much painful uncertainty, that he must quit his "trade of preaching," resign his benefice, and trust to providence for a livelihood for himself and his little ones. At the instant when he had formed this decision these words came into his thoughts — "Remember me, how here, in this world where now thou livest, I was a poor despised Saviour, though now a rich immortal God; and therefore take no care, I will provide for thee and thine." At the same time, he adds, the Lord freely forgave him all that was past, present, and to come.*

Henceforth Claxton thoroughly threw in his lot with the fortunes of the Muggletonians. After John Reeve's death

* See *Introductory Epistle to The Right Devil Discovered, &c.*, by Laur. Claxton, 1659.

he asked leave to write in vindication and justification of the Commission of the Spirit. Muggleton gave his consent, and he accordingly wrote four books, one after another, which had a great run among his friends of the Commission, and succeeded in gaining many adherents to the cause he had at heart. Of these books the present writer has seen three in print and one in manuscript. They are written with some power, and, as one might expect, with more polish than was at the command of his associates. What seems specially to have attracted his imagination, and principally engaged his pen was the Muggletonian doctrine of the Devil, as being no invisible malign agent, but, since the fall of Eve, existing only as the unclean Reason in Man. He is merry on the applications of this doctrine. Derisively alluding to the popular portrait of a hoofed and horned King of Darkness, — the only “devil,” says he, “that ever was, is, or shall be, is for the most part as comely a creature as walks in London streets; and hath as neat a foot and a hand as any lady in the land!”* And the title of the first book he wrote was, *Look about you, for the Devil that you fear is in you.*

Claxton might have continued to render great service to Muggleton, had not his confidence in his own abilities proved fatal to his submissively working under his chief. “He grew so proud as to say that nobody could write in the vindication of this Commission, now that John Reeve was dead, but he; and to that purpose he wrote another book,

* *Right Devil*, *ut supra*, p. 22. Compare the following question and answer from Fielding's *Eurydice* (1735):

“*Mr. Spindle.* Well, but what sort of a fellow is the old gentleman, the devil, hey?

“*Capt. Weazle.* Is he? Why, a very pretty sort of a gentleman, a very fine gentleman; but, my dear, you have seen him five hundred times already. The moment I saw him here, I remembered to have seen him shuffle cards at White's and George's, to have met him often on the Exchange, and in the Alley, and never missed him in or about Westminster Hall. I will introduce you to him.”

intituled "*The Lost Sheep Found*, 1660."* When Muggleton read this book, at the instance of several believers who complained of Claxton's lording it over them in it, he discovered that his new assistant was exalting himself as the only true Bishop (note the recovered accent of the priest, the only true Bishop) and faithful messenger of Jesus Christ; and that he was describing Muggleton as merely John Reeve's mouthpiece and no more. Whereupon Muggleton at once and for ever interdicted Laurence Claxton from writing in defence of the Commission. This was in 1660.† For a year Claxton stood out in opposition; but obtaining no followers, and finding Muggleton's power too strong for him, he humbled himself and acknowledged his fault. Muggleton accordingly forgave him, and took him again into his favour; cautiously tying him down, however, to write no more. His end is thus narrated, by the man whom he had vainly opposed. "It came to pass, when the fire destroyed the city of London, he, to get a livelihood, did engage to help persons of quality to borrow money, to build their houses again. But the persons that had the money did run away, and left Claxton in the lurch; the debt was £100. So he was arrested and put in Ludgate Gaol for this money. He lay there a whole year, and died there. But he gave a very good testimony of his faith in the true God, and in this Commission of the Spirit, and of that full assurance of eternal happiness he should enjoy to eternity."‡

* Sir Walter Scott had seen this *Lost Sheep*, which the present writer has not yet found. He treats it, however, as the production of a Familist; evidently confusing the Muggletonians with the Grindletonians, an earlier sect. See Note E. to Woodstock.

† Muggleton spoke of Claxton as a Gehazi, and attributes his change of tone in part to his having "consulted with that venomous serpent," his wife, Frances, who seems never to have shared her husband's belief in the Witnesses, and had been sentenced by John Reeve. Muggleton bade the believers in Maidstone allow Claxton "no more maintenance weekly, as you have done formerly;" still he continued to recommend his earlier writings, and furnished them to believers as late as 1684.

‡ *Acts of the Witnesses, ut supra*, p. 82.

Matters went on pretty smoothly with our Prophet for about ten years after Claxton's recantation. He wrote books, disputed with all comers, paid visits to his friends in various parts of the country. Among other places, he visited Nottingham in 1663, at the expense of a "Society of Behmenists, mixed with Quakers," who invited him thither at the instance of his friend Ellen Sudbury, wife of Richard Sudbury, an ironmonger of Nottingham. It was on one of his journeys that he got into difficulties at Chesterfield, where his valued friend and correspondent, Mrs. Dorothy Carter, a widow, and the aunt of Ellen Sudbury, kept a small school. He was apprehended and committed to Derby Gaol, at the instance of the Rev. John Coope, the vicar of Chesterfield, on the old charge of denying the Holy Trinity. The horse on which he rode was also seized on behalf of the Lord of the Manor, and he was more troubled for the horse than for himself, "because his friend, John Brunt, was surety for the horse, else pay four pounds." The Earl of Newcastle, however, who was Lord of the Manor, on hearing of the circumstances, "was angry," and said, "Will you take away a man's horse before he be convicted and condemned? I charge you," said he, "that the horse be put to grass, and let the owner pay for his meat." Coope, the prosecutor, was surprised at the sense and courage which Muggleton displayed on examination; and said to the aldermen, when the prisoner was removed, "that this man was the soberest, wisest man of a fanatic that ever he talked with;" he had fancied him a sort of Quaker. However, Muggleton lay in Derby Gaol nine days, and then was released on bail to meet his trial at the next assizes. Probably then the prosecution was allowed to drop, for he complains of nothing except the nine days' imprisonment and the fees of the prison, and the grief which his detention caused to his newly married wife.

This imprisonment in Derby Gaol is worth noting, inas-

much as it was the occasion of an interview between Lodowicke Muggleton and that same Gervase Bennet (or Benet) whose sarcasm gave rise to the fixing of the name "Quakers" upon the "Society of Friends of Truth," or followers of George Fox. It does not appear that we have any other account of Judge Bennet which gives any insight into the character of the man. Muggleton describes him as "more atheistical" than his brother magistrates, "being of the Sadducee spirit," and says that on his wisdom and knowledge they all depended. He speaks of him too as "a moderate man, who asked his questions moderately." For four hours they talked together on points of theology. They had agreed to refer the topics of their discussion to the arbitrament of Holy Scripture, in the handling of which Muggleton showed his wonted shrewdness. Bennet was nonplused, to the great delight of the magistrates, the sheriff's men, and the jailor, who were present at the interview, and rejoiced in the defeat of one who had so often vanquished them in argument. They could not restrain their glee, but frequently interrupted the colloquy. "Mr. Bennet, we think you have met with one that is too hard for you now!" "Now, Mr. Bennet, you have met with your match!" Bennet showed great good humour in the disputation; he evidently was very much taken with his stout opponent, and acknowledged that he approved of what Muggleton had spoken better than of anything that ever he heard in his life, and could not gainsay it; but said, moreover, he could not venture his salvation on any man's words. On one point they were agreed, to begin with. Bennet had "been a long time of the opinion that the soul of man is mortal, and doth die."* This picture of the man, candid, materialistic, literal, fond of disputation, and of all things abhorring fanaticism, answers exactly to the character

* *Acts of the Witnesses, ut supra*, pp. 93-102.

which Fox's *Journal* leads us to form of him, and supplies an interesting historical confirmation of its truth.

Earlier in the same year in which he suffered imprisonment at Derby, Muggleton had married for the third time. His wife, Mary Martin, was the daughter of John Martin, a tanner, at East Malling, in Kent. "I had been," says he, "a widower sixteen years before I took this maid to wife; she was twenty-five years of age when I married her, and I was about fifty-three years old when I took her to wife. She was of a good, meek, innocent and just nature, besides the strong faith and zeal she had in this Commission of the Spirit; so that she was very suitable, both in spiritual and temporal qualifications, unto my nature."* Indeed this last marriage of his seems to have been a very happy one. His wife brought him a little property, and devoted herself to his interests till the day of his death; often by her quickness of wit standing between him and danger; and tending his latter years with the most patient care. She survived him twenty years.

Derby Gaol was not the last prison into which Muggleton found his way. His books were seized in London in 1670; but he escaped the malice of his persecutors, and remained in hiding for a time. Nor would he have appeared again, probably, in a court of law, had not the death, in 1675, of a well-to-do friend of his, Deborah Brunt, widow of John Brunt (one of the first believers, and a good friend to the Witnesses during their imprisonment in 1653), left him in the position of her executor. He brought an action of trespass against Sir John James, in respect of some house property, formerly belonging to Mrs. Brunt, in the Postern,

* *Ibid.*, p. 86. The marriage took place in 1663, at some time previous to 14th Nov. 1663. (See Letter to Dorothy Carter, of that date.) It was solemnised "according to the law of England." It is presumed that it did not take place at Church, as no entry of it is to be heard of in any likely Parish Register.

London Wall. This led to a lawsuit, in the course of which he was obliged to make his appearance in the Spiritual Court, only to be once more apprehended on the charge of blasphemy.

This was at the lowest ebb of his fortunes. For, during his enforced absence from home, certain of his followers had revolted ; and, under four notable ringleaders (a scrivener, a flaxman, a brewer, and—what Muggleton hated of all things—a Scotchman), had declared that Nine Assertions made by the prophet, which they specified in writing, were contrary both to common sense and to the principles of John Reeve. The Assertions are certainly strong enough ; however, Muggleton defended them through thick and thin. As to common sense, what was that but reason ; and reason was the Devil. And as to John Reeve, why faith in a living prophet's word was surely better than quotation of a dead one's writing.

It showed the power of the man's character that, although circumstances forbade him to meet the rebels openly, yet his denunciation of them by letter was enough to put an end to the division. The four leaders were expelled ; one only of them being allowed afterwards to return to the fold. As for the Scotchman, Walter Buchanan, he received his sentence of damnation, expressed in language which was sufficiently warm. "You have showed yourself a right Scotchman, a dissembling, false-hearted man, of the Scottish nature. And it would be a rare thing to meet with a true-hearted Scotchman or woman, that is upright in heart either to God or man ; for I have been in this Commission almost twenty years, and I never knew but two, a Scotchman and a Scotchwoman, that made a profession of this faith ; and they both proved false-hearted both to God and man."*

However, the internal conflict among his followers must

* *Stream from the Tree of Life, ut supra*, p. 10.

have added greatly to the bitterness of a persecution, which in itself was sufficiently severe. After long delay, Muggleton was tried, before judges Atkins and Rainsford, at the Old Bailey, on Wednesday, the 17th January, 1677. Sir Robert Atkins was lenient to him on the trial; but Sir Richard Rainsford, Chief Justice of the King's Bench (who had recently succeeded Sir Matthew Hale), pelted him with gross abuse from the bench; and when it is added that sentence was given by the notorious George Jefferies, then Recorder of London, it may be presumed that it did not err on the side of leniency.

The trial can hardly be termed a fair one. The evidence against him was indeed derived from his own books, which had been seized at his house by the wardens of the Stationers' Company.* Still there was some difficulty in shaping the case so as to procure a verdict against him; because anything not published within the last three years came within the Act of Indemnity of 1674; and Muggleton had sent nothing to the press since 1669. Unfortunately, however, to evade the difficulty of publishing a heretical book in England, he had formerly allowed one of his books against the Quakers to appear with the imprint "Amsterdam, printed in the year of our Lord God 1663, and are to be had in Great Trinity Lane, over against the Lyon and the Lamb." The "Amsterdam" was palpably a ruse;† might not the volume

* Some of the actual books seized are still extant. One is in the Lambeth Library, and bears on the back of the title the inscription, "Aug: 30th, 1676. Seized att Muggleton's house in the Posterne by Samuel Marne & Richard Clarke, Wardens." Another is in St. Paul's Library, and has on the fly leaf the words "30th August, 1676. Seized at Lodowick Muggleton's house by Samll. Mearne & Richard Clark, Wardens." This copy belonged to Bishop Compton, and was presented to St. Paul's Library, with the rest of the Bishop's benefaction, in July, 1715.

† It was not an uncommon evasion. For instance, the first edition of Richard Overton's *Man's Mortalitie* bears the imprint, "Amsterdam, Printed by John Canne, Anno Dom. 1644."

have also been antedated, so as to put it under the protection of the Act? This was the argument adopted by his prosecutors, and it was successful. The indictment set forth that "he, the said Lodowicke Muggleton, on the 30th of August, in the 23rd year of His Majesty's reign, in St. Giles' Parish without Cripplegate, London, by force and arms, did unlawfully, wickedly, maliciously, scandalously, blasphemously, seditiously, schismatically, and heretically, write, print, and sell, utter and publish, a certain malicious, scandalous, blasphemous, seditious, and heretical book, entitled *The Neck of the Quakers Broken*." Being found guilty, he was condemned to pay a fine of £500, and to stand upon the pillory in three of the most eminent places of the city, the Exchange, Temple Bar, and Smithfield, on three several days; his books to be burned with fire before his face. The pillory he accordingly suffered, and was much knocked about in it, "his grey hairs gilded with dirt and rotten eggs," according to a contemporary account. The fine he could not pay, and was accordingly sent to prison; but having remained there six months, he was released after paying £100, and finding two sureties for his good behaviour during life, on the 19th July, 1677; a day of joy to his people, and a red letter day in their calendar.

If any one were anxious to vindicate the salutary effect of persecution, as a means of keeping obstinate people in order, he might fairly refer us to the case of Lodowicke Muggleton, as an instance in point. There can be no doubt that the Last Witness was cowed by his appearance in the pillory. He was an old man, or at least not a young one, being sixty-eight years of age, and though he survived his rough usage twenty years, it deserves remark that he never again ventured, at all events in writing, to pass the merciless sentence of damnation upon an opponent. Certainly this is a very significant fact. He had learned a lesson. No more for

him of "the modest punishment of a wooden ruff." He was not willing to expose himself again to the jeers and violence of the mob. They had spilled his blood, and it would cry out in vengeance against them, he said; but for all that, he took care not to come in the way of the authorities again. With this event therefore his public life ends; henceforth we know him only in his correspondence, which forms a large collection. He wrote his autobiography for posthumous publication, bringing it up to the date of his release from prison; and nothing shows more plainly how the degradation of his cruel punishment had eaten into his soul, than the awful denunciations against judges, jury, wardens, lawyers,—in short, against all who had taken part in his prosecution,—which fill the later pages of his autobiography. The terrible vehemence 'and deep searching thirst for vengeance' of his complaint and supplication to God against his enemies is so real and vivid as to make one shudder.

It would appear that he lived hereafter a quiet easy life; dispensing his blessings to his followers; joining in their social meetings; twice a-year commemorating the two great events of the giving of the Commission to John Reeve in February 1652, and his own release from custody, in July 1677; looked up to as an unerring oracle in things spiritual, an excellent guide and adviser in things temporal too. In his later letters, a large space is taken up with counsel and suggestion on matters of this material kind. It is difficult to resist the temptation of extracting one of these, unique in its kind, which, as a study of character, is simply delicious.

A Copy of a Letter written by the Prophet Lodowicke Muggleton to the Widow Mrs. Elizabeth Marsden, [formerly Elizabeth Smith, and servant to Dorothy Carter,] of Chesterfield, bearing date from London, April 18th, 1685.

"Dear friend in the true faith, Elizabeth Marsden.

Having an opportunity at this time to inform you, that there is a design in agitation that will be for your good, (and your children's

good also, as long as your natural life in this world, if you please to accept of it,) I thought it convenient and necessary to give you timely notice of it, that you may not be surprised, but may have time to consider of it. The business is this; there is a friend of ours that is a widower, that is of this faith, that is a shopkeeper and of a genteel trade, (namely, a salesman and a tailor both, that selleth all new apparel,) and he hearing that you are a shopkeeper (though of another trade) and of this faith, and of a good natural temper, doth conceive you would make a good wife to live here at London, if you shall think good.

The man's name is John Croxen; he liveth at the corner house at Houndsditch; it is the best house for trade in all the street, being a corner house. His trade doth bring in at least two or three hundred pounds a year. And as for his person, I suppose you will not dislike it; and for his age it is very suitable unto yours, he is about four or five and forty years old is the most, (and I suppose you are seven or eight and thirty years old, which is very suitable.) And this is one of this faith we own, and we know him to be as good a natured man to a wife as any I know in the world. I know you may live in as much splendour and credit as any merchant's wife in London doth, if you have him to your husband. You shall have a maid servant, and men servants to be at your command. My wife's brother's son is apprentice with him, and hath served now, at Midsummer, five years of his time; which if I had not known him to be a good natured man, (and a good trade,) he should never have been put apprentice to him.

All the rich believers here in London do very well approve of his having of you to wife, and of your having of him to your husband; and would be glad to have you live at London; that you may be numbered among the rich in this world—as well as being numbered with the rich in faith, rich in the world to come, as I know you will. Besides I cannot conceive how you can raise yourself, or prefer yourself or your two children, if you should match with any man there in the country. Though it were with a man of a hundred a year, yet your person will be made a mere drudge, and your children mere slaves. Neither is there any of this faith there in that country (as I know of) that is worth any thing considerable; and for you to match with one that is contrary, it will cause shipwreck to be made of the peace of your mind, which is of more value than the whole world.

Now I shall tell you how the state of this man's condition is; that if you cannot bear with it you shall have your liberty to choose or refuse,

and save him a journey. This John Croxen hath had two wives, and hath at this time five children, all alive. Two by the first wife, before I knew him; and those two are both out of the way—the daughter getteth her living, being a good needle-woman, or at service; or might be married, but her father doth not like the man that she would have, because he hath no trade, (for a trade is the surest thing to get bread in this England, if a man be a good husband;) the other is a boy that is apprentice to a silk weaver, which hath served great part of his time, so that he will be no trouble nor charge to his father nor his wife. And by this last wife he hath three daughters; the eldest is (I think) a matter of twelve or thirteen years old, and she is put apprentice to a friend of ours for five years, to be a shop-keeper. So that there are but two young daughters that are at home with him; the one of them is about eight years old, and the other (I think) about four years old. These two must be at home—yet no great trouble to his wife, because the maid can make them ready and send them to school. For if you should be his wife you would do more good ten times, in looking to the shop and selling of garments, and to know the prices, and learn the trade; that in case he should die before you, you may drive the trade yourself. Thus I have given you an account of the whole matter.

Now he and William Chaire, a batchelor, do intend after Whitsuntide to make a journey into those parts, to see you and other friends in Staffordshire. Mr. Croxen cometh only to you, upon that account as to make you his wife, if you like the man when you see him. And William Chaire he cometh on purpose to Elizabeth Burton, to make her his wife if she will accept of him: he had a great love for her when she was here in London.

But now, dear friend, the case is thus; you must send me word whether you are resolved to keep yourself a widow always, or whether you are resolved to live there where you are always, or whether you are minded to change your condition you are now in, or whether you will suffer him to come to see you. And if you do not like him when you have seen him, you shall have liberty in your mind to refuse him; for I would not persuade you to anything against your own mind, nor advise you to anything that were not for your good. Therefore I would desire you to send your answer unto me as soon as you can conveniently (and as short as you can) to these particulars, in the latter part of this letter. Likewise, I desire you not to let any of our friends in those parts see this letter, neither would I have you to mention it to any one, till after you have given me your answer. And if you do

incline in your mind to hearken to the conditions contained in this letter, then keep it to yourself, and let none know of it; until Mr. Croxen and William Chaire doth come to see you and the rest of our friends, which will be after Whitsuntide. So, with my love and my wife's love remembered unto yourself, I take leave, and remain

Your friend in the true faith,

LODOWICKE MUGGLETON.

*London, the 18th day
of April, 1685.*

Direct your letter unto me, thus, For Mr. Delamain, upon Bread Street Hill, at the sign of the "Three Tobacco Pipes," in London.*

This curious letter affords no bad index of Muggleton's character on its practical side. He combined with his large and dogmatic claim to a specialty of religious teaching considerable acuteness and experience in the management of affairs. In his own calling he was industrious, and apparently successful, until his peculiar religious position began to interfere with his temporal advancement; but neither before nor after that period, though acutely sensible of the advantage of means and position, did he shew on his own behalf any greed of gain. Very early in life he relinquished the fair opportunity of a prosperous marriage, because his conscience would not allow him to sanction the making of money by usury; some years later he lost "a great stroke of work" at his trade, because he could no longer follow the Puritans in church fellowship; he prides himself on his independence, asserts that while he had "spent many a pound for the Commission's sake," he "did not live of the Gospel, as the Apostles did, without working," and claiming to be "more true in that particular than ever any Apostle was, or ever any Quaker was."† When he gave up business he could fearlessly affirm: "I owe the world nothing; I never wronged any in the

* *Supplement, ut supra*, pp. 44—47.

† *Spiritual Epistles*, 2nd Edition, 1820, p. 113.

world the value of sixpence in my life, to my knowledge.”* His calling was one against which jokes have been directed, ever since mankind first profited by the productions of its skill, yet he continued to take an honest pride in it. “What were the prophets of old, many of them, but herdsmen? and the apostles but fishermen? Very mean employments; yet God hath honoured them with great honour, and hath made poor men kings, prophets, and apostles. And why should it seem strange to the world, that God should choose two tailors . . . to be His two last Prophets and Witnesses of the Spirit in this last age of the world? A tailor is more honourable with kings, and princes, and noblemen of this world than herdsmen and fishermen.”†

He was proud, too, of the old Northamptonshire stock from which he came, and of the great London in which he was born. With a pardonable feeling of the John Bull kind, he describes himself as “a free-born Englishman, and a freeman of London by birth, and never was out of England in all my life.” A great dread of the perils of the ocean not only forbade him “to concern himself with any ship or sea affairs, if it were ever so much for his profit,” but kept him from ever quitting English ground. “I have,” he writes to a friend in Ireland, “such an antipathy in my nature, that if I might have ten thousand pounds I would not come through that sea gulf to see you; though I have travelled several thousand miles in England in my time by land.”‡ Indeed he can find no simile strong enough to realise his imagination of the horrors of the sea passage, than that great gulf which cut off communication between Dives in hell (Ireland) and Lazarus in heaven. His amusing hatred of England’s

† *Spiritual Epistles, ut supra*, p. 440.

* *Ibid.*, p. 474.

‡ *Supplement, ut supra*, p. 54.

ancient northern foe has already been referred to.* Of foreign nations or of foreign affairs he never seems, judging from his letters, to have taken much notice. When one of his friends thought to better his fortunes by emigration to Virginia, "I wonder," wrote he, "what is in men's minds, to run amongst the heathens who are without God in the world. My nature is so contrary to go out of the land of Canaan, of England, amongst the heathen, that I had rather live in prison here all days of my life."† Nay, even of home politics he seems to have been quite unconscious, except when the legal enactments of his time pressed indirectly upon him or his followers. He lived through the most exciting period of English history; he honoured and revered Oliver Cromwell as a true "Lion of the tribe of Judah"; yet his correspondence, so far as it is preserved, contains not a single allusion to the restoration of the monarchy, nor does it even speak of events which must certainly have touched him nearly, the Great Plague and Fire of London. Public matters had no interest for him; he was equally happy under a monarchy, a commonwealth, or a dictatorship. He only asked to be let alone. Yet though in this respect he was one of the quietest and most easily governed of subjects, he was by no means the man to sit down tamely under oppression. Every constitutional means that could be taken for the maintenance of his own liberties he would take; and he had somehow possessed himself of a very accurate knowledge of the limits and the requirements of the law. His constant endeavour on his own part, and his constant recommendation to his followers, was never to come into conflict with the law of the land, or give spiritual enemies a legal handle against

* The prejudice extended to his followers, and was not overcome till the time of John Feat, a Scotchman by birth, and a leading Muggletonian, between 1750 and 1774.

† *Spiritual Epistles, ut supra*, p. 405.

them. He never would have them resist the arm of the law, but besought them to pay the stipulated fine at once, when brought into trouble through refusing to take the oath of allegiance or to attend at church. "It is only a money business." "It is better to give them their fess now while it is but little, so you can keep the mind free from oaths and worship." "It is better to part with silver than to part with peace of conscience."* Such was his sound advice, and such, it may be added, was his own constant practice. He paid fines repeatedly, because, having been chosen to serve on various parish offices, such as scavenger, questman, or constable, he refused to qualify for them by taking the oath of allegiance.

The refusal to take an oath was a common scruple with tender consciences at that day; and along with it generally went the belief that it was unlawful to make war, or to bear arms. Muggleton was not so rigid and absolute in his objection to the former as the Society of Friends have always been. Where an oath was a mere legal form and order in a court of justice, he permitted it to be taken. The only oaths utterly forbidden to him were "swearing to unrighteous things," and swearing vainly in common discourse.† He made but one exception, however, to the unlawfulness of war, and it is a characteristic one. He allowed a disciple of his, Thomas Nosworthy, a settler in Antigua, to bear arms "for the defence and preservation of the temporal life, and the estates of the people, against the heathen, and any other enemies that seek to invade that island." The case was different "in those strange islands, amongst the heathen," to what it was "here in England, Ireland, and Scotland, who profess all one faith; though very few have true faith. . . . Therefore, as the old proverb saith, 'If you will live at Rome, you must do

* *Spiritual Epistles ut supra*, pp. 112, 107, 181.

† *Ibid.*, p. 59.—He was opposed to capital punishment, even for murder. *Div. Looking-glass*, chap. xiv.

as Rome doth.'”* Here we see something of his contempt, not only for aliens, but also for those who left their native land for the chances of success on foreign soil.

The profession of a soldier was not the only one which Muggleton regarded as unlawful. He condemns each one of the three learned professions, not sparing any. When he was consulted on the choice of a profession by a young disciple, John Cowlye, who had received his education at the University of Cambridge, Muggleton “convinced him of the unlawfulness of all three, for any saint or God’s elect to undertake.” We should hardly expect him, considering what was his religious position, to have a good word for the clerical vocation. He pronounces their ministry all false, “from the first Pope to the last Quaker,” even one as well as the other. “As for the doctors of physic, they are the greatest cheats, upon a natural account, that are in the world. They cheat people of their money and of their health; and it would be good if there were never a doctor of physic in the world; people would live longer, and live better in health. For God never appointed any doctor of physic, but he appointed nature to preserve nature.” “And as for the lawyers, they keep the keys of the knowledge of the law, and will neither enter into truth and honesty themselves, nor suffer others to enter in that would.” Hardly is there a man to be found but is “deceived either by the physician, lawyer, or priest. Nay they deceive one another, for the priest is deceived by the doctor of physic, and the doctor of physic is deceived by the priest And as for the lawyer, he cheats the doctor and the priest both and they do the like by him so that they get pretty even one with another. But all people besides, that deal with them, are sure to be deceived and to lose by them.” After such an exposition as this (which is

* *Spiritual Epistles, ut supra*, p. 469.

much fuller and more fearful in the original account, where it goes into questions of the world to come), we need not wonder that "when the young man heard these things, he left all preferment that way, for truth's sake, and became a steadfast and true believer; and he, being a scholar, was mighty able to oppose the learned."*

Among the scruples which Muggleton derived from his puritan training was an abhorrence of card-playing, which he classed with drunkenness,† and other vices of a reprobate life. Yet he was not averse to amusement on its own account, or to the enjoyment of life in a sober and chaste way. Against the vice of uncleanness he was especially severe, and in his own person he seems to have been, not simply strict in outward conduct, but pure of mind. True, his language is plain enough, and now and then runs into coarseness, especially in invective; when provoked, as he admits, he could sometimes speak "unsavoury" words. He was a puritan in the severity with which he reprobated whatever approached to vice or to injustice. In his sober common sense view of things, and in his genuine love of toleration and hatred of all kinds of religious persecution, he was something more than a puritan. "I always loved the persecuted better than I did the persecutor," he writes to George Fox; "and I always had compassion upon the afflicted for conscience-sake, though I knew they suffered for a mere lie, as all you Quakers do. Yet I say, whoever doth persecute you for conscience in meeting and worshipping an unknown God (as you Quakers do), I say those men that do persecute you willingly, will be every man of them damned to eternity."‡

From some of the prevalent superstitions and delusions

* *Acts of the Witnesses, ut supra*, pp. 112, 114. *Whole Book of Revelation, ut supra*, pp. 239, 244.

† *Acts of the Witnesses, ut supra*, p. 125.

‡ *Letter to George Fox*, 2nd Edition, 1756, p. 88.

of his age he was singularly free. Witchcraft was still, in his time, widely believed in and feared. He treated it as a sinful surrender on the part of witches and possessed persons to the power of their own disordered imaginations; and wrote a treatise (which he himself valued very highly), called the *Witch of Endor*, expressly to apply this explanation to the Scriptural accounts of witchcraft. He laughs at the popular notion that witches have power over "infants, which are not capable of fear; for fear and belief are the inlet to all witchcraft."* In like manner he interpreted the phenomena of demoniacal possession as evidence only of disease. Distracted men, madmen, or fools are "possessed with devils, that is, with distempers of nature. These are devils that are produced through accidents of nature; some extraordinary grief, fright, or loss hath broke the brain, and so the seat of reason is quite out of order."† In harmony with this rationalistic explanation Muggleton seems inclined, not only to spiritualise certain of the miracles of our Lord, but even to regard the spiritual meaning as the only legitimate sense of some of them; *e. g.*, of the casting of the demons into the bodies of swine.‡ His strong disinclination to the ready acceptance of mere marvels is aptly shown in a postscript to a letter, bearing date 19th June, 1669, and addressed to his friend Thomas Tomkinson, which to us, who have lately been favoured with the story of the Welsh fasting girl, will not be without interest. "I would desire," he writes, "when you send to me or Mr. Delamaine, if it be not too much trouble, [that you would tell me] whether that maid that fasted a whole year, as was reported, be alive yet, or no; because I heard at Chesterfield for certain that she was yet alive, and that it was a mere cheat to get money."§

* *Spiritual Epistles*, *ut supra*, p. 412.

† *Letter to George Foz*, *ut supra*, p. 65.

‡ *Stream from the Tree of Life*, Edition of 1758, p. 59.

§ *Spiritual Epistles*, *ut supra*, p. 291.

Lodowicke Muggleton's end was a peaceful close to a long and, in some respects, an arduous life. The old man's latter days, spent amid the reverence of his followers, and watched over by the faithful affection of his wife, must have been happy. "Upon the first day of March 169 $\frac{7}{8}$, the prophet was taken with an illness and weakness; upon which he said these words, 'Now hath God sent death unto me'; and presently after was helped to bed. And though he kept his bed, yet we could not perceive that he was sick, only weak; and he lay as if he slept; but in such quietness as if he was nothing concerned with either pain or sickness. So that it was mere age that took him away. The fourteenth day of March he departed this life, with as much peace and quietness as ever any man did, being about eighty-eight years of age; so that he had that blessing to come to his grave in a full age, like as a shock of corn cometh in at his season. Upon the sixteenth day his corpse was removed to Lorimer's Hall [close to his house in the Postern, where he died], and on the seventeenth day was from thence attended on with two hundred and forty-eight friends, with six of us appointed to carry the pall, each with gloves and hatbands, accompanying him to Bethlehem Churchyard: where he was buried by [beside] his fellow Witness, which was according to his own appointment."* The rhyming inscription on his tomb was quoted in a former paper. A copy of verses, entitled *An Elegy on the Death of Mr. Lodowicke Muggleton*, appeared shortly after his decease, and, though not written by a disciple, was printed as a broad-sheet at the request of his followers, in 1698, and has by them been at least twice reprinted, in 1754 and 1831.

In the portrait of Muggleton we may easily discern the traces of that combination of integrity, shrewdness, and

* *Acts of the Witnesses*, first Edition, 1699, end of Epistle Dedicatory by Thomas Tomkinson.

determination, which formed his somewhat remarkable career. There exist three original likenesses of him. Of these the best executed is an oval oil painting of the head and bust, looking to the right, at present hanging in the Bird Gallery at the British Museum. It was presented anonymously to the Trustees of that institution, through Dr. Maty, the then Librarian, on the 26th October 1758. There is a memorandum in pencil accompanying the Report on the subject of the presentation, "aged 66, 1674." Another most interesting painting, is a full length (also looking to the right), by Muggleton's friend, William Wood, of Braintree, now in the possession of the Muggletonian body. It was formerly in the hands of Mr. Tweene at Ware, at whose death it was purchased by the late Mr. Isaac Frost. Of more value than either of these, perhaps, is the cast of the prophet's features taken after death. This also is in the possession of the Muggletonian body. Copies have been taken from it at different times; on the last occasion (early in the present year) the original was unfortunately broken, yet not so as to injure the face; it has been carefully put together again, but has not been improved by a new coat of thin black paint. It had been painted black at a former period. From this cast a small copperplate engraving was executed at an early date. It bears the engraver's name, G. V. Caffeel, but has no date. The plate is in the possession of the Muggletonian body; it is poorly engraved and nearly worn out; early copies of it are rare, as it seems to have been much in request among the believers. A small oil painting was made from it in May 1813, by Richard Pickersgill, himself a Muggletonian; of this several copies are in existence, one of them being preserved by the Muggletonian body. In 1829, at the expense of Joseph and Isaac Frost, a half length engraving was executed by J. Kennerley, from the full length portrait. This is usually found prefixed to the Divine Song-book, and is to

be had separately. It does the original from which it is taken no sort of justice, and introduces accessories, allegorical and otherwise, which are peculiar to itself. This engraving has been photographed in carte-de-visite size. Muggleton's personal appearance furnished matter for jest to his and George Fox's opponent, Charles Leslie, who compares the two men in respect of their "long straight hair, like rat's tails;" and adds, "it hath been observed of great enthusiasts that their hair is generally slank, without any curl; which proceeds from a moisture of brain that inclines to folly. It was thus with Fox and Muggleton."* An early and good copy of Caffeel's engraving, prefixed to the copy of the first edition of the *Acts of the Witnesses*, in the Lambeth Library, has written below it these words, in a contemporary hand: "He had yellow hair and a ruddie cōplexion."

It is time to speak of some of the prominent followers of Muggleton. The "eldest son of the Commission of the Spirit", as he has been called, was JOHN SADDINGTON, a Leicestershire man, from Arnesby, who seems to have been afterwards engaged in business in London in the sugar trade. He was a fine handsome fellow, and is addressed, in a copy of contemporary verses, as "John Saddington the tall." He it was who, at the time of the rebellion against the Nine Assertions, did most to secure the attachment of the wavering believers to their absent chief. He is the author of two works in print, and of three or four which remain in manuscript.

But though not the "eldest son," yet certainly the chief advocate of the Commission was THOMAS TOMKINSON, of Sladehouse. This staunch defender of an unpopular faith came of an old family of Staffordshire yeomen, who for generations had held the farm of Sladehouse,† in the parish of Ilam,

* *Leslie's Theological Works*, 1721, vol. ii. p. 357.

† This Sladehouse was the scene of the murder of Joseph Mycock by his younger

not far from Dovedale. About Easter of 1869, the present writer made a pilgrimage to the locality, and examined the registers of Ilam and Blore-Ray, in search of traces of the family. There are plenty of such traces to be found, but, owing to the extreme frequency with which the christian names Thomas and Ann occur in various branches of the Tomkinson family, it is very difficult to extricate the lines of descent. Their pedigree goes up to a William Tomkinson, who died in 1559. Several members of the family appear to have been, for their station, men of some culture. There is a curious tablet in Blore church to the memory of Thomas Tomkinson, who died in 1640, respecting whom the local tradition is that he was a great scholar. Another ancient member of the family, a former tenant of Town End Farm, in Swinscoe, is celebrated as having been a man of huge stature; a qualification of which the rural mind was probably a better judge than of scholastic attainment.

Our Thomas Tomkinson, born in 1631, the son of Richard and Ann Tomkinson, of Sladehouse, was a great reader from his youth, and his favourite subject was church history. He had himself "procured a library of Presbyterian books,"* and from his landlord, the Earl of Ardglass, at Throwley Hall, he "borrowed St. Augustine's *City of God*, and Dr. Hammond's Works." His mother "a zealous Puritan," was "a virtuous good woman, and greatly charitable." His father seems to have been but an incompetent person: at his wife's death, he made over his affairs to his son, and boarded with him as a lodger. Tomkinson heard nothing of the Commission of the Spirit till he was thirty years old,

brother Benjamin Mycock, on the 10th February, 1812. They were sons of a labourer at Grindon, and the elder brother, who was forty or fifty years of age, had married his former employer, Mrs. Sarah Maulton, of Sladehouse.

* *Truth's Triumph*, pub. 1823, p. 258.

when he came across one of Claxton's books, the very title of which not only startled him, but more than half convinced him that there was truth in it. A year later he arrived in London, on May-day, 1662, expressly "to see and discourse with the surviving Prophet." He found him in Great Trinity Lane, at work at his trade, and enjoyed some conversation with him. At this time he was on the eve of matrimony, and on his return home he united himself to "a good virtuous maid." This step threw him back somewhat in his allegiance to Muggleton. His father was a decided enemy to the faith; his wife did not favour it, though she was, he says, "pretty moderate. So, to please an old father and a young wife, I went to church by fits." A man of his intelligence, however, soon made other converts, and a community of Muggletonians, over twenty in number, sprang up in the north-eastern corner of Staffordshire. They met occasionally at each others' houses, but still went sometimes to church. A quarrel in 1674, with the parson of his parish seems to have precipitated Tomkinson's hostility to the Establishment; and henceforth he went no more to church. In consequence of this he was vexed with writ after writ, accused of popery, and injured in his farm business. His great enemy was one Archdeacon Brown; while his great friend was a certain Archdeacon Cook, who had overheard him zealously contend with a Quaker, at the Dog Inn, in Lichfield, on behalf of the doctrine of the resurrection of Christ's body. He was excommunicated by his parson; but, through Archdeacon Cook's interest, and the payment of a fine, he received absolution of this sentence. On this fact he thus moralises. "On the Sunday following, he [the parson] published my absolution and remission of my sins; and so I was taken into the Church as a dear brother, through a little money and friendship. . . . And truly I thought it was cheap enough to escape

their Hell and to gain their Heaven for twenty shillings charge.”*

Some years after this he removed to London, and became one of the most zealous pillars of the Muggletonian community there. But few of his many written contributions to Muggletonian literature have found their way into print; one only, so far as I am aware, was published during his lifetime, *The Muggletonians Principles Prevailing*, by T. T. 1695, being an answer to Dr. John Williams’ (anonymous) *True Representation of the Absurd and Mischievous Principles of the Sect commonly known by the name of Muggletonians*, 1694. Others of his numerous works were circulated in manuscript; and those which have been published are still much read and highly prized by his fellow believers. They are clearly and logically written, entertaining and powerful. Much cannot be said for their grammar or their orthography, which latter forms a system by itself. Nor is it possible to avoid noticing the singular and almost incredible blunders, which, however, were only the natural pitfalls in the literary path of a man who made himself a great reader, without the requisite education to correct and balance his reading. Nothing which it has ever been our good fortune to come across, in the way of literary blunders, can compare with the following remark of Tomkinson’s upon Aristotle. He quotes as Aristotle’s opinion, “that law that is most filled by reason must needs be most victorious and triumphant,” and then adds, “Howbeit, Aristotle was something dampled in his judgment by reading Julius Scalinger, who said that the beginning of reason was not reason; Aristotle, admiring of this sentence, said, Certainly there is something before and

* These facts are taken from a MS. narrative, entitled *The Christian Convert, or Christianity Revived*. . . . by that Christian Convert, Thomas Tomkinson, written in the year of our Lord God 1692. The copy above used seems to have been transcribed by Arden Bonell, circa 1740.

better than reason, wherein reason itself had its rise.”* The picture of the old Greek perusing the sage criticisms of his modern commentator, and being “something dampled in his judgment” thereby, until admiration ensued, is conceived in a truly delicious vein of exquisite anachronism.

Here it may be well to say something about the Muggletonian sacred books. They recognise, first of all, in common with all Christians, the Holy Scriptures of the Old and New Testaments. They exclude, however, the Apocrypha of the Old Testament from the canon, following here their puritan origin;† they exclude also the writings of Solomon, as being the utterances only of natural wisdom. “Solomon, indeed,” says John Reeve, “was a very wise man, but I never read that he was a holy or prophetic man; therefore it does not appear to me that that he was a penman of Holy Writ.”‡ In this way they get rid of the testimony of Ecclesiastes to the separate existence and destiny of the soul.

Second only to the received books of Scripture, the Muggletonians venerate that curious and ancient production called the *Testament of the Twelve Patriarchs*, an apocryphal work, older than Origen’s time, and probably dating from the second century; but which they, like Bishop Robert Grosseteste of Lincoln (1175—1253), who introduced it into this country, refer to and quote as inspired. Grosseteste first heard of the book from John de Basingstokes; he at once sent to Athens for it, and himself translated it from the Greek to the Latin. It was first printed in 1577, englished by A. G. (Arthur Golding), and has been very frequently reprinted down to the present time, often with woodcuts, as a

* *Truth’s Triumph*, ut supra, p. 178.

† The same circumstance led to a preference for the “Old Translation,” or Geneva Bible, which was greatly strengthened by finding in it such renderings as “there is no man good but one, which is God,” and “their soul dieth,” &c.

‡ *Joyful News*, ut supra, p. 8.

sort of chap book. Dibdin describes it as "one of the most popular manuals of the sixteenth and seventeenth centuries." Whiston held it to be of canonical authority.* The first mention of it by a Muggletonian writer, is to be found in a manuscript letter by Thomas Tomkinson, in 1674.†

A similar place to that occupied by the *Testament of the Twelve Patriarchs*, among the standard authorities of the Muggletonians, has been allotted to the *Book of Enoch*, ever since its appearance in English in 1821. This apocryphal book was, up to the time of St. Augustine, much prized by the Christian Fathers. It passed out of sight, however (with the exception of a few Greek fragments in the *Chronographia* of Syncellus), until in 1773 some manuscripts of the Ethiopic version were brought to Europe by Bruce, the Abyssinian traveller. One of these was deposited in the Bodleian Library, and from it the English version of Dr. Laurence (afterwards Archbishop of Cashel) was made, and published at Oxford in 1821. Laurence also published the Ethiopic text in 1838; and another Ethiopic text was published at Leipsig in 1851, by Dr. A. Dillman. Two German translations have appeared since 1833, and the book continues to excite much interest and controversy among biblical and oriental scholars. It may occasion surprise that this book should so readily have been adopted as canonical by the Muggletonian body. It is even more remarkable, considering that no English version of any part of it existed in Muggleton's own time, that we should find the following passage in a letter of his in 1682. "The first man God chose, after the fall of Adam, was Enoch; and God did furnish him with revelation to write books. He left this revelation to

* *Notes and Queries*, second series, vol. vi., p. 3.

† It may be mentioned that there is now a very excellent and scholarly edition of the Greek text, with an introductory essay, attributing the origin of the work to the Nazarene body. See *The Testaments of the XII. Patriarchs: An attempt to estimate their Historic and Dogmatic Worth*. By Robert Sinkler, M.A., 1869.

Noah, and Noah left it to Shem, and Shem left it to his sons, until it came to Abraham, Isaac, and Jacob. So that [this was] Enoch's revelation and declaration to the fathers of old; and all that did believe the books of Enoch, they were as a Parliament to enact it as a Statute-Law to their children from generation to generation for ever."* The late Mr. Isaac Frost was, it is believed, the means of introducing the book to his fellow Muggletonians; and he makes considerable use of it, in his painstaking and handsome work, *Two Systems of Astronomy* (1846), as confirming the Muggletonian, in opposition to the commonly received theory of the Universe.

Next in order come the writings of John Reeve and Lodowicke Muggleton, regarded, though not verbally inspired, as of equal or greater authority than Holy Scripture; at least so far as the enunciation of the Six Principles is concerned; because the "Commission of the Spirit hath deeper mysteries held forth in it than the other Commissions had."† Muggletonians speak commonly, therefore, not of Two Testaments, the Old and the New, but of Three; they enumerate Three Records; Three Commissions, each to be obeyed in its own time and place, and having force so long as God sustains it. The Commissions of the Water (that by Moses), and of the Blood (that by the Apostles), have made way for the Commission of the Spirit, which is thus at once the last and the highest. Any further development of revelation they believe to have been expressly excluded by the voice of God.

Muggletonians have no recognised formula of Creed. Adherence to the Six Principles is the sole criterion and requisite of membership to their Church. At different times,

* *Spiritual Epistles*, *ut supra*, p. 516, and again p. 587. Muggleton no doubt derived his impressions of the book from the references to it in the *Testament of the XII. Patriarchs*.

† *Stream from the Tree of Life*, *ut supra*, p. 32.

however, private believers have drawn up statements of their doctrinal belief. Thus in 1675, John Saddington elaborated XLVIII. *Articles of True Faith*, which were printed in 1830. In 1723, an anonymous believer drew up XXXVI. *Articles of the Third Record*; and in 1794, William Sedgwick (apparently in consequence of the Birchite Schism) prepared XVI. *Articles* to express the true Muggletonian belief. Neither of these two formularies have been printed. A printed paraphrase of the Apostles' Creed in the Muggletonian sense, with Scripture references, which is signed James Tennant, is sometimes found pasted on the fly leaf of Muggletonian books. The earliest copy of this is printed in black letter, but it bears no date, nor is anything known respecting its author. There is also a curious rhyming Creed of twenty-eight lines, in manuscript, perhaps a hundred years old, which seems from its condition to have been suspended from a wall, or otherwise publicly exhibited.

It will not do to forget, in this connection, the collection of *Divine Songs*, or *Songbook*, as it is familiarly called, which supplies to them the place of a collection of hymns, and indeed is the only approach to a devotional manual. For while prayer is by them eschewed, songs of gratitude and thanksgiving are deemed lawful, though by no means incumbent upon any believer who may think them savouring too much of the exploded idea of worship. Collections of these Songs were circulated in manuscript from the earliest days of the sect, many of them having been written by the immediate followers of Muggleton. A great number of these manuscript collections are still preserved by the body; several of them being in the autograph of the composers. The first mention of a printed Songbook in the records of the body, is on the 16th February, 1794; many entries of the sale of the volume are to be met with up to 14th August, 1796. No copy of this book has fallen in the present

writer's way ; it seems, from a letter of James Frost, 29th March, 1812, that it was not executed at the expense of the body, but "made a present of to the church by a printer." The church, however, compiled in 1829 the collection at present in use. It consists of two hundred and twenty-eight Songs, all by Muggletonian authors, and a good number of them expressly written for the collection. The largest contributor is Boyer Glover, a London watch-and-clockmaker, who may be deemed the poet of the Muggletonians. His name first occurs in their records in 1771. He contributes forty-nine Songs. James Miller (who wrote between 1730 and 1750), follows with twenty-seven. There are one or two by John Nicholls, a musician, who "played on the Lord Mayor's Day and in the waits," who died, old and helpless, about 1745, and through whom the only fragment that exists in John Reeve's autograph came into the possession of the body. The earliest Song-writers seem to be Thomas Turner, John Ladd, William Wood, Elizabeth Goodwin, and Elizabeth Henn. Thomas Tomkinson also tried his hand at verse composition.

It is not very difficult to estimate the extent to which the Muggletonian doctrines have met with success. Their influence has been confined almost entirely to the small body which professes them ; for their writings have seldom been published in the ordinary way ; they have never invited converts, and have found no opportunity, and looked for none, of bringing their opinions before the notice of the world. Neither Reeve nor Muggleton were preachers ; they disseminated their views in conversation and by letter : and this has ever been the habit of the body. Persons of influential position have rarely been attracted to their community, but the personal character of its members has always stood high ; few in numbers, they are and have been an industrious, and, in the main, a well-to-do and thriving set of people. Mug-

gleton's own times were the palmy days of the society, as respects the social standing of its members. He could point among his supporters to people of all classes, from Colonel Robert Phaire, the governor of Cork, to good, "sober, and conscientious" Mistress Dorothy Carter. Both of these had come to Muggleton from the Society of Friends, and from this body, as well as from their predecessors the Ranters and the Anabaptists, he received many, if not most, of the early adherents to his cause. In their case (as in Reeve's own), the change was a natural consequence of the exhaustion of their previous views, which threw them, by an inevitable reaction, into the opposite extreme.

In the absence of any express information, we must refer to such casual indications of the progress of the body as we may discover in their own writings, or in other places. Already, in 1654, two years after the revelation of John Reeve, some of their books had found their way to New England, when an order was made that every inhabitant who had in custody "any of the books of John Reeves and Lodowick Muggleton, 'who pretend to be the two last witnesses and prophets of Jesus Christ,' which books were said to be full of blasphemies, should bring or send them in to the next magistrate, within one month, on pain of ten pounds for each book remaining in any person's hands after that time."* By 1660, Muggleton himself testifies of his Commission, that "the sound of it hath gone through many parts of Christendom, as in this part of England, Scotland, Ireland, New England, Virginia, Barbadoes, and many other places I will not here mention. But the doctrine of the Commission of the Spirit hath been very little received in

* Hutchinson's *History of the Colony of Massachusetts Bay*, 2nd edition, 1763, p. 196. Hutchinson evidently supposes them to have been Quakers. The books probably came from Bristol, where there were believers in 1654. *Sac. Rem.* p. 59.

the world; but the most that have received it are here in London, and in Cambridgeshire, and in Kent.”* In 1669, the Muggletonian views were thus introduced to the continent of Europe. “There is a great increase in the faith,” writes Muggleton, “here at London, and in some countries. There have been with me of late two or three German men, that were banished out of Germany for not submitting to the worship set up by that power. The one of these is a doctor of physic, and another was a minister in Germany. The minister could not speak English as well as the doctor, but the doctor bought all the books, and hath written the Commission Book into the German language, and hath sent it among the Germans. So what the issue will be, time will bring forth; for there are many that would believe, did they but understand it in their own language.”† In spite of this it remained true that a prophet is without honour in his own house. “This thirty-three years that I have been in this Commission,” confesses Muggleton in 1685, “there hath not [been] one neighbour, or acquaintance, or kindred here in London (as I know of) that hath believed my report, save my own children.”‡

Still the Muggletonian views made way, and were handed down, from generation to generation, although obscurely. Out of London, the first society of believers appears to have been that which John Reeve visited in 1656, when he found some half score believers near Cambridge, poor men, “husbandmen and tradesmen, that labour for their bread.”§

We have seen already that, about the year 1664, there were over twenty believers in Staffordshire. In September, 1667, it was reported, in “an account of the number of the

* *Spiritual Epistles*, ut supra, p. 36.

† *Spiritual Epistles*, ut supra, p. 293.

‡ *Spiritual Epistles*, ut supra, p. 575.

§ *Supplement*, ut supra, p. 2.

conformists, nonconformists, &c.," that, "at Ashford [in Kent] and at other places, we find a new sort of heretics, after the name of Muggleton, a London tailor, in number thirty."* In the seventeenth edition of Edward Chamberlayne's *Angliae Notitia*, 1691, they are mentioned for the first time, and placed among the dwindling sects. In the eighteenth edition, 1694, we are told (p. 378), "the Muggletonians are scarce extant." The same words appear in succeeding editions till the twenty-first, in 1704, when all mention of this body is omitted. In William Maitland's *History of London*, 1739, there are enumerated (p. 517), among the places of worship (which, of course, is a mistake), two Muggletonian Meetings, one at Barnaby Street (south of St. Olave's, Southwark), and the other in Old Street Square (top of Aldersgate). This information is repeated in the Rev. John Entick's edition of Maitland, in 1756. A careful search of their records since 1770 would enable us to ascertain pretty accurately the names and numbers of the London Muggletonians from that time to this. There is a manuscript "Collection of the names of male friends residing in England, 14 August, 1803," which contains ninety-eight names, distributed over London, Kent, Hertfordshire, Norwich, Derbyshire, Bristol, Oxford, Walworth (and one in Ireland). The lists of subscribers' names prefixed to the *Interpretation of the Revelation*, 1808; to the *Volume of Spiritual Epistles*, 1820; to *Truths Triumph*, 1823; and to the *Songbook*, 1829, are useful in this connection.

In 1863, one of their body estimated their numbers as follows:—"There are, perhaps, two hundred and fifty, or three hundred, in London and its suburbs, a few in Kent, about sixty or eighty in Derbyshire, twelve or fifteen in Nottingham, and half a dozen in Mansfield; but as we believe

* *The Genuine Remains of Dr. Thomas Barlow, late Lord Bishop of Lincoln*, 1693, p. 313.

that public worship is not now acceptable to the Deity, of course we have no places in which to meet for worship, and no record of our numbers, so it is very possible that there may be Muggletonians in other districts with whom I have never communicated. For example, those in Derbyshire were ignorant of the existence of any persons entertaining the same faith in London, until one of their number removed thither to seek employment, and, after residing there a short time, heard of the London brethren by mere accident.”*

No regular and systematic records of their history have ever been kept by the Muggletonians. The manuscripts in the possession of their body, which do not seem to have been formally examined and collected before 1772, the time of the Birchite schism, and have not yet been catalogued, consist of I., a number of expository treatises, poems, songs, and other writings, illustrating the growth and character of their peculiar faith; II., a large collection of letters, some trivial enough, but many of them curious and interesting, extending, but in no connected series, from the origin of their community till the present day; III., a mass of bills and account books, beginning about 1770, and relating to the subscriptions for and sale of their printed books, and the expenses incurred at their social meetings. In 1804, the Community first became possessed of property, through the bequest of Catherine Peers, for the formation of a relief fund; and from that time to the present an exact account has been kept of its monetary affairs.

Among the manuscripts in Class I. are a few (including a transcript of great part of the *Commission Book*), in Muggleton's thick, tremulous, laboured hand-writing, which contrasts curiously with Reeve's fine, clear, minute penmanship. Thomas Tomkinson's stiff, upright, very

* Letter by William Ridsdale, *Inquirer*, 21st March, 1863.

legible characters (more like printing than writing), and his marvellous orthography, are largely represented in the collection. It seems almost a pity that the modern editors of the early Muggletonian literature should have felt themselves bound to adhere so rigidly as they have done to the grammar and punctuation, though not, except in case of proper names, to the spelling of the originals. The present writer has been obliged, in order to make his quotations intelligible to the general reader, to repunctuate freely, and now and then to smooth over a grammatical inequality, which impaired the sense as well as the elegance of the passage.*

There is no room here for an account of the numerous materials embraced in the letters which form Class II.; and in truth, to an outsider, an analysis of their contents would be exceedingly dry, at least where it was not exceedingly ludicrous. Appeals for help, addressed to the London Society, by or on behalf of poorer brethren in various parts of the country, were pretty frequent. One cannot but feel compassion for poor Edmond Feaver (whose tone had been high enough in his day of prosperity), when he writes from Kettering, 28th January, 1759, to John Austin Garrett, the chief person among the London believers, begging for charity with the touching plea, "I am Reduced to the Loest Degree my Coat, wastcoat and Britches are not all worth one shilling."

The various controversies which these letters reveal turn more or less on the original difference (already described) between Reeve and Muggleton as to the immediate notice of God. From an early time there seem to have been Reevites, (or Reeveonians) in contradistinction to Muggletonians.

* It is not easy to hit the medium between an exact transcript for the curious eye, and too unsparing a revision. George Fox's *Journal*, for instance, has been greatly over-edited from the first. His autographs and his own publications are as uncouth, as those of Muggleton, or more so.

This may be what Muggleton means, when he speaks in 1663 about "those that disadhere unto John Reeve," most of whom however were then dead, and others fallen away from the steadfastness of faith.* Even the Rebellion against the Nine Assertions of Muggleton in 1671, partook in some degree of this party character. For, as Muggleton observes in his Answer, "it is the nature of Reason to believe dead prophets rather than living prophets. And it is the nature of Faith to believe live prophets rather than dead prophets."† A similar division of allegiance is hinted at in Thomas Tomkinson's Epistle Dedicatory to the Acts of the Witnesses, 1699, when he says, (p. vi.) "there can be no salvation to such as shall reject him or his writings, although they pretend to own John Reeve." It may be conjectured that the *Sacred Remains*, published in 1706, which consist exclusively of "treatises epistolary and public by the Lord's last immediate messenger, John Reeve," proceeded from this party.

There were some small internal controversies on other points, as in 1736, when Arden Bonell opposed a new doctrine of the Ascension of Beasts, or the resurrection of the lower animals. This curious discussion, together with some skirmishing on doctrinal points between Bonell and Phillip Lathorp, and again between Bonell and Joseph Horrell; and, a few years later, between John Meall and Edmond Feaver, constitutes nearly all our knowledge of Muggletonian history during the first half of the eighteenth century. No serious division occurred in the Muggletonian forces until that occasioned, about 1772, by the defection of the Birchites. William Crabb, of Braintree, speaks in July 1773 of a "misunderstanding in the Church," and this misunderstanding soon reveals itself as connected with the

* *Spiritual Epistles*, *ut supra*, p. 129.

† *Acts of the Witnesses*, *ut supra*, p. 150.

doctrine of immediate notice and the leadership of James Birch.

This JAMES BIRCH, a Welshman by birth, was a watch motion maker, living near Aldersgate, London. There exists a rhythmical account, from his own pen, of his conversion to Muggletonian views, which occupies fifteen rude stanzas, of eight lines each, and is dated the 5th December, 1771. In the same year his name heads the subscription list to a work of John Brown, of Norwich, on the *Devil's Downfall*. By the next year his opinions seem to have carried him out of harmony with his fellow-believers. He rejected their doctrine, that those who hold the true faith enjoy at once an absolute assurance of salvation, and held that this assurance was often withheld till the hour of death. He believed also, in opposition to Muggleton's teaching, that God does exercise an immediate oversight in human affairs, and affords an immediate inspiration, without which his former revelations are of no avail. He acquired a certain following, who did not, however, as yet formally separate from the original community. By degrees, however, he applied this doctrine of immediate notice in his own favour, and founded a small separatist community of which he was the prophet, immediately directed by a divine call. One William Matthews, of Bristol, was his high priest. This assumption of a prophetic office, in 1778, lost him ten of his followers, who withdrew from him in consequence of it; they did not return to Muggletonian orthodoxy, but remained true to Birch's more sober views, under the leadership of Martha Collier. There were now three divisions among the Muggletonians: the original body or Church, represented by Benedict Shield in London, and Roger Gibson in New York; the Birchites, or Anti-church; and the Collierites, or Immediate-notice people. Birch was maintained in independence by the contributions of his followers, of whom in 1786 there were some thirty in

London, and others in Wales, in the parts about Pembroke. Two strange fantastic books by Birch were printed about the end of last century, they are called the *Book of Cherubical Reason*, and the *Book upon the Gospel and Regeneration*. They are more incoherent than the writings of Thomas Tany, and read like the productions of a madman. Their author seems to have outlived his influence and most of his followers, and to have died soon after the beginning of this century, but when and where has not been ascertained. Whether at this moment there are any Birchites in existence, does not appear. Very likely there may be, for these small sects die hard; but it is scarcely probable that they continue to hold regular meetings. Their last known place of meeting was in the Barbican, and there are several persons living who remember having known Birchites. The influence of their opinions is deprecated in the following opening of a Song by James Frost, written in 1809, and included in the collection of 1829:—

“ You faithful Muggletonians, who truly do believe
 The doctrine of Muggleton to be the same as Reeve;
 Let no wise anti-followers infuse into your ear,
 That a prayer Christ does hear from us mortals here below.”

As the Muggletonians countenance no form of worship whatever, their gatherings are almost entirely of a festive character. They have two yearly gatherings, or Holidays, one of which at least dates from their prophet's time; for it was instituted 19th July, 1677, for the purpose of commemorating his release from prison on that day, and has been held annually ever since, though now, in consequence of the alteration in the calendar, it is kept on the 30th July. The account of contributions and expenses at one of the earliest of these meetings has been preserved, and is here given, as it is a curious specimen of a tavern bill nearly two hundred years ago.

At our meeteing at Holloway on the 19th of July 1682. At
Mr. Hoolbrookes at the Greene Man, Present there

The Prophitt of God

M ^{rs} Muggleton	
M ^{rs} Delanall	00 : 05 : 00
M ^{rs} Smith	00 : 05 : 00
M ^{rs} Webb	00 : 05 : 00
M ^{rs} Euans	00 : 05 : 00
M ^r Cooper.....	00 : 05 : 00
M ^{rs} Cooper	00 : 05 : 00
M ^r Atkinson.....	00 : 05 : 00
M ^{rs} Atkinson	00 : 05 : 00
M ^r Gouldique	00 : 05 : 00
M ^r Rich : Smith	00 : 05 : 00
M ^r Whitehead	00 : 05 : 00
M ^r Brocke.....	00 : 05 : 00
M ^r Symonds.....	00 : 05 : 00
Delamain Senr.	00 : 05 : 00
M ^{rs} Delamain	00 : 05 : 00
Delamain Junr.	00 : 05 : 00
M ^r Burrell.....	00 : 05 : 00
M ^{rs} Henn	00 : 05 : 00
M ^{rs} Roe	00 : 05 : 00

Received..... 04 : 15 : 00

Monyes Paid away the 19th July 1682, at Mr. Hollbrookes at the
Greene Man in Holloway

pd for 18 Pullets at 14d \varnothing Pullett is	01 : 01 : 00
pd for 18 Siuell Oringes at	00 : 01 : 08
pd for 6 penny post Letters of advise	00 : 00 : 07
pd for the prophitt's Coach	00 : 03 : 06
pd a porter from London w th the fowles	00 : 01 : 06
pd for 5 δ & $\frac{1}{2}$ of Bacon at 7 ^d $\frac{1}{2}$ \varnothing δ is	00 : 03 : 04
pd for 5 large Collyflowers	00 : 01 : 00
pd for Bread and Beere	00 : 09 : 04
pd for Wine	01 : 06 : 00
pd for Dressing Meate and fowleing Linning ...	00 : 14 : 00
pd for 5 Tarts at 16 ^d \varnothing Tart	00 : 06 : 08
pd for Butter and Cheese	00 : 01 : 06
pd to the Servants of the House	00 : 02 : 00
pd to y ^e man of the Bowleing Greene	00 : 01 : 00
ffor 1 Quartern of Tobacco	00 : 00 : 06

04 : 13 : 07

The other yearly Holiday is the anniversary of the giving of the Commission to John Reeve on the 3d, 4th, and 5th February, 1652, but now kept on the 14th, 15th, and 16th February. The two festivals are referred to as "the Holy Days" as early as 1763, and were probably so termed much before that time. These assemblies (especially the February one) bring together from various parts of the country as many of the believers as can contrive to be present.

In addition to these larger gatherings, more frequent meetings, monthly or weekly, have been arranged from time to time to suit local convenience. This custom dates also, there is little doubt, from the earliest time. "These Muggletonians," writes S. Rogers from Cambridge, in 1692, "meet at their prophet's (as they call him), where he expounds the Scriptures, and answers any question they put to him."* And "about the year 1770," we are told, "there was a small community of Muggletonians, who met every Sunday afternoon in a room one story high, built out in the garden of the Gun, a well known public house, in Islington, where they used to smoke and drink with a great Bible before them."† From the Gun, Islington, in 1770, we can trace their meetings, by help of tavern bills, to the Blue Boar, Aldersgate Street, 1787-1790, and 1796-1802; the Hampshire Hog, Peartree Street, Goswell Street, 1791-1795; the Nag's Head, Aldersgate Street, 1815; the Bull's Head, Jewin Crescent, 1818-1825; the Coach and Horses, St. John's Square, Clerkenwell, 1845, and probably to other similar places. All members of the community were expected to attend these meetings, and to contribute a small sum to the general entertainment; a trifling fine was imposed (in 1799) for non-attendance. Occasionally the fare was provided by special

* *The Post-Boy Robb'd of his Mail*, 2nd Edition, 1706, p. 425.

† *Dictionary of All Religions*, by Hannah Adams, [U.S.A.] Edited by T. Williams, N.D. [1823.] Art. Muggletonians.

bounty; this was usually the custom on the death of any well-to-do member. Hence we read that, at the monthly meeting on the 2nd March, 1831, "two legs of mutton were had, they being left by Mrs. Sarah Gandar, as a token of her spiritual love to the church, of which the following friends partook in commemoration." The only regulations that seem to have been passed for the conduct of these meetings were such as were designed to exclude discussions on "natural" matters, that is, any subjects except those, which concerned points of faith. A resolution to this effect was passed on 24th November, 1793, and "signed by the Church present," twenty-five in number. Again, on the 4th March, 1798, we find the following prudent regulation subscribed by forty-one members present. "For the peace and good order of the Church, it is agreed on by this Church that no natural affairs, neither public nor private, shall be brought up in this Church, so as to disturb the peace of it. And if any person or persons shall bring up any natural affairs, either public or private, so as to disturb the Church, and being called to order by the Church shall not comply therewith,—the reckoning shall be paid, *and the Church leave the room, and leave the disturbers of it to themselves*; and if any money shall be above the reckoning, the said money to be put into the Closet and spent the next meeting." O sensible Church!

There was a book-closet belonging to the Society, for the safe custody of which, at the inn which formed their place of meeting, they paid a certain rent. Otherwise they had no local habitation as a Society, up to last year, 1869; now, however, a new era in their history has been begun, by their acquirement, for the first time, of a home which they can call their own. The place of meeting at present held on lease by the Muggletonians of London and the vicinity, is a small house, in New Street, off Bishopsgate Street Without. This New Street, which was considerably widened some years ago,

is specially interesting to the community, inasmuch as they believe it to occupy the same site as Walnut Tree Yard, in which Lodowicke Muggleton was born in 1609; and it is possible they may be right. Their meeting room is on the first floor, and might, at a pinch, hold seventy people; on the floors above and below it are dressing and cloak rooms, and the apartments of the keeper. Beside the fire-place in the meeting room hangs the full length portrait of Muggleton by William Wood; and between the front windows is placed the following inscription:

THIS TABLET

WAS ERECTED ON THE 16TH DAY OF MAY,
1869,

To commemorate the opening of the

NEW READING ROOM,

*No. 7, New Street, Bishopgate. But more
especially to denote the place as formerly called*

WALNUT TREE YARD,

WHERE THE LORD'S LAST WITNESS WAS BORN.

ALSO,

*To record the names of a few of our
Christian Brethren, who, as believers in*

THE THIRD COMMISSION

declared by

JOHN REEVE & LODOWICK MUGGLETON,

*have greatly aided the Church, & partly
endowed the present building.*

BENEFACTORS.

CATHERINE PEERS,

JOHN GANDAR,

JOSEPH GANDAR,

JOSEPH FROST,

ISAAC FROST.

TRUSTEES.

JAMES P. SMITH,

J. D. ASPLAND

WM. CATES,

ISAAC FROST, Jr.

Here, on the evenings of the 14th, 15th, 16th of February last, the believers assembled; never to the number of more than forty, nor more than twenty-five men at one time. Of those present only one-fourth, it was said, were born in the faith. Their business was to converse, take a meal together, and sing selections from the Divine Song Book. On the first evening the proceedings opened with tea, about five o'clock. About six, the Commission Song ("Arise, my soul, arise!") was sung, not by all the company, but by a lady who volunteered to do so. Then came in a large bowl of port wine negus, with slices of lemon floating upon its surface, and the believer whose seniority entitled him to take the lead in the proceedings (there was no chairman) gave, "Our usual toast—absent friends, and all the household of faith wherever they may be." The negus was conveyed into wine glasses by means of an antique silver ladle, the gift of a former believer (who bore the appropriate name of Mr. Thomas Spooner). When it had been handed round, more songs were heard; each person who chose volunteering to sing one. None of the airs were sacred, with the single exception of the evening-hymn tune, which had a very discordant sound as applied to a production of Boyer Glover's, beginning, "Oh! wondrous, great, amazing, strange." In about an hour, beer was brought in, but few partook of it; and by half-past eight supper was ready. It was a plain, substantial meal; consisting of a round of beef, a ham, cheese, butter, bread, and beer. Throughout the evening, every one seemed heartily to enjoy himself and herself, with no lack of friendliness, but with complete decorum. No speeches were made, but between the songs conversation became pretty general. By ten o'clock all were on their way homeward.

It is not necessary to describe the programme of two subsequent evenings, which very closely resembled the opening

one, except that the negus was omitted, and the time occupied was shorter. At the breaking up of the Holiday on Wednesday evening, a very short speech was made, or rather a few words were said, by one of the principal members. He referred to the fact that this was their 218th Anniversary, and the first occasion of its being held in a room of their own. He referred also to the fact that, for the first time in their history, a stranger had been permitted to attend their February Holiday, and paid the present writer the compliment of saying that he thought there had been no harm done, and that the experiment might safely be repeated.

One virtue, if it be a virtue, the modern Mugglestonians seem to have nearly lost; the virtue, namely, of passing sentence of damnation upon their fellow creatures. In the prophet's days it was regarded almost as a duty, certainly as a mark of faith, and a means of strengthening faith, for private believers to pass this sentence in proper cases.* There were only two limitations to the exercise of the power; one was, that Muggleston himself reserved the privilege of taking off, or ratifying, as the case might be, the sentence which any of his followers had imposed;† and the other was, that "if a man give sentence, and afterwards doubts, that sentence returns on a man's own head, and the party so sentenced is freed from the power of his curse."‡ Accordingly there are well authenticated instances of the use of this power by Muggleston's favourite daughter Sarah, by his wife, by his friend Dorothy Carter, and by many other believers not specified by name. In the internal controversies of Mugglestonians during the last century it was a weapon frequently resorted to as an ultimatum. That it is scarcely heard of now, is due partly to the peace and quiet presently enjoyed

* *Spiritual Epistles*, ut supra, p. 340.

† *Acts of the Witnesses*, ut supra, p. 144.

‡ *Spiritual Epistles*, ut supra, p. 340.

by the body, and partly to the influence of modern ideas even upon this conservative little community. The same influence shows itself in an opinion, which is now tolerated, respecting the number of the lost. John Reeve, who was once a Universalist, going to the opposite extreme, expresses himself as "fully satisfied that there is a generality of men and women ordained to an estate of unbelief that they might everlastingly perish."* He charitably held, however, that all children without exception will be saved.† Muggleton, who in 1662 declared that "the greatest part of mankind" are the seed of the serpent, yet considered, in 1665, that half the world would be saved, counting children, and half would prove reprobate.‡ Notwithstanding this, the present writer has been informed, by a much respected member of the body, that in friendly talk upon the subject with a fellow believer of more conservative tendencies than himself, his friend held that very few would be saved, while he on the contrary believed that very few would be damned; and he expressly ascribed his own view to the influence of modern opinions upon the subject.

The present writer has indeed seen and conversed with a sensible Muggletonian, who yet was bold enough to pass the damnatory sentence upon an unfortunate Swedenborgian lecturer; but the majority of existing believers would probably never think of following this example. Among the last instances of the formal delivery of this sentence in writing, is that of the Author of *Waverley*, who was sentenced under that title by the late Robert Wallis, on the 18th July, 1826, on account of offensive expressions in the novel of *Woodstock*, which speak of "those Grindletonians or Muggle-

* *Stream from the Tree of Life*, *ut supra*, p. 52.

† *Divine Looking Glass*, 3rd Edition 1719, p. 155.

‡ *Interpretation of Eleventh Chapter of Revelation*, p. 23. *Spiritual Epistles*, *ut supra*, p. 180.

tonians in whom is the perfection of every foul and blasphemous heresy, united with such an universal practice of hypocritical assentuation, as would deceive their master, even Satan himself.”* The latest case of all is perhaps that of the notorious Richard Carlile, who in his coarse way had made much game of the little sect, telling them “though they have no priests, they stand in much need of a school-master,” and indulging in sundry unmannerly jests respecting members of the body in Nottingham. At that time Joseph and Isaac Frost were living, and they jointly passed the sentence on him by letter.†

The works of Reeve and Muggleton are the following, enumerated here in the order of their publication.

- Transcendent Spiritual Treatise*, 1652.
- General Epistle from the Holy Spirit*, 1653.
- Remonstrance from the Eternal God*, 1653.
- Divine Looking Glass*, 1656.
- Joyful News from Heaven*, 1658.
- Interpretation of Revelation*, cap. XI., 1662.
- Neck of the Quakers' Broken*, 1663.
- Letter to Thomas Taylor*, 1664.
- Interpretation of Whole of Revelation*, 1665.
- Looking Glass for George Fox*, 1668.
- Witch of Endor*, 1669.
- Answer to William Penn*, 1673.
- Acts of the Witnesses*, 1699. *Written*, 1677.
- Sacred Remains*, 1706. *Written*, 1652–1657.
- Occasional Discourse*, 1719. *Written*, 1668.
- Answer to Isaac Pennington*, 1719. *Partly Printed*, 1669.
- Spiritual Epistles*, 1755. *Written*, 1653–1691.
- Stream from Tree of Life*, 1758. *Written*, 1654–1682.
- Supplement to Book of Letters*, 1831. *Written*, 1656–1688.

* *Woodstock*, 1826, vol. 3, p. 205. Sir Walter evidently had in view, not Muggletonians, of whom he knew nothing, but Familists.

† See Carlile's publication, *The Lion*, ii. 13, and iii. 9.

THIRTEENTH ORDINARY MEETING.

ROYAL INSTITUTION, 18th April, 1870.

JOHN BIRKBECK NEVINS, M.D., PRESIDENT, in the Chair.

Before the business of the Ordinary Meeting began, the Members present formed themselves into an EXTRAORDINARY MEETING of the Society (pursuant to notice), when the vote of £5 to the *Sars Subscription Fund* was confirmed.

Mr. T. J. Moore brought before the Society some rare specimens of crustacea, from an elevated lake in the island of Anno Bon, and specimens of fish from the coasts of that island, all of which had been obtained by Mr. R. B. N. Walker, Corresponding Member of the Society, and presented by him to the Free Museum, where they had arrived within the last few hours. Mr. Moore stated that a small living electric fish (*Malapterurus*) had been lately presented to the Museum by Capt. Robinson, of the barque *Elgiva*, imported by him from the West Coast of Africa.

The Rev. H. H. Higgins exhibited a remarkable *pupa*-case, presented to the Free Museum by Mr. Wm. Joynson, who had obtained it at Bombay. The insect forming the case had strengthened and protected it, by completely encircling it with strong thorn-like bodies, shaped like needles, and quite as sharp, and from two to three inches in length.

The following Paper was then read.

EMIGRATION OF ORPHANS.

THAT THE ORPHANS BROUGHT UP AT OUR ORPHAN INSTITUTIONS
OUGHT TO BE INDUCED AND ASSISTED TO EMIGRATE TO OUR
COLONIES, INSTEAD OF BEING PROVIDED WITH SITUATIONS IN
THIS COUNTRY.

By JOHN W. HAYWARD, M.D., M.R.C.S., L.S.A.

It may have been thought by some, Mr. President, that this subject is not of so much importance or interest to the members of this Society that it should occupy an evening: I, however, cannot think so, for inasmuch as it is a part of the great question—What shall we do with our poor? it appeals as well to the intellectual, the moral and the social faculties; to the pockets and to the hearts of the whole population, and especially of philosophers and philanthropists.

And, moreover, the emigration of our surplus population, and the disposal of our public orphans, have really become two of the great questions of the day. The subject of Emigration has even been brought before the present session of Parliament; and it is creating great interest throughout the country; and philanthropists are endeavouring, by the formation of emigration clubs, societies, and leagues, to assist to relieve our over-stocked labour markets. And the emigration of our public orphans has not only become a great social question, but has lately been put to the test of practical experience, especially by this town: only a short time ago the steamer *Hibernia* sailed from this port for Canada with quite a number of orphan girls on board, in age ranging from six to ten years: of these, fifty were from our own Industrial Schools, and the rest were from London, Wolverhampton and other large towns. And Mr. Cropper remarked,

in reference hereto, that “this was merely the beginning of a large system of emigration of these children.” This, I trust, will prove to be true; for so evidently does it appear to me to be the duty of the authorities to these public orphans and to the public, and so evidently is it to the advantage of these orphans themselves, to be induced to emigrate, that I trust this subject will soon be taken up quite earnestly, not by parish authorities only, but by the supporters of the various orphan institutions also. And if the following facts and arguments shall contribute to the hastening of this very desirable result, I shall consider myself amply repaid for the labour of preparing them.

The term ‘orphan’ means children who have lost one or both parents. And for the convenience of referring to them, orphans may be divided into two principal classes, viz., PRIVATE orphans, or those brought up by their own relations; and PUBLIC orphans, or those brought up by public money. And each of these two principal classes may be again divided into two subdivisions—the PRIVATE orphans may be subdivided into, *first*, those for whom a provision for after life either has been made by their parents or can be made by their relations; and, *second*, those for whom no such provision has been or can be made, because to bring them up and educate them is quite as much as their relations can do: PUBLIC orphans may be subdivided into, *first*, those brought up by parish authorities; and, *second*, those brought up by the various charitable institutions.

It is to *public* orphans and the disposal of them I desire to draw the attention of the society this evening, or at least to the disposal of those brought up at our Orphan Institutions. *What is it best to do for and with public orphans? How shall we best serve them and dispose of them?* These have always been, and they still are, unsettled questions: and it is to the discussion of these questions I now invite this Society.

In all ages, and in most countries, orphans have elicited more sympathy, perhaps, than any other individuals of the human family: and it is well that it should have been so; for of all human beings, not crippled or diseased, orphans are most in need of sympathy and assistance, and most deserving of them. Our own age and country are not behind other ages and countries in this care and provision for this helpless portion of our population: and our own 'good old town of Liverpool' will compare favourably with any other town in this respect; for besides the three workhouses and the industrial schools, in each of which there is ample provision for orphans, there are, at fewest, seven institutions devoted solely to the reception, education and bringing up of public orphans, viz., five Protestant and two Roman Catholic Orphan Institutions. And these are maintained by voluntary benevolence, at a cost of about £15,000 a year, exclusive of the amount of the interest on the cost of the land and the buildings. And they give accommodation, at the present time, to about 1,100 children, most of whom have lost *both* parents. And besides these, many of our orphans are provided for elsewhere; for instance, in the Masonic Orphan Schools, the Commercial Travellers' and the Medical Orphan Asylums, Müller's Orphanage, and others; each of which receives both orphans and subscriptions from this town.

Of *Parish* Orphans there are, at the present time, in the Liverpool Workhouse about 350, in the Toxteth Park Workhouse about 260, in the West Derby Workhouse about 110, and in the Industrial Schools about 1,272; making a total of about 2,000 Parish Orphans. And these cost £13 a year each for their mere maintenance and education; and adding to this the interest on the cost of the land and buildings, we have at least £18 a year each; making a total of about £36,000 a year out of the Rates, for the mere bringing up of *Parish* ORPHANS, over and above the cost of the non-orphan

pauper children. Now this is a very serious consideration for the Ratepayers, for these orphans are kept in these institutions until they are 15 or 16 years of age; and then a situation and an outfit are provided for them. 2,000 orphans, at £18 a year each until they are 15 or 16 years of age! This is a very tantalising thought for the small shopkeepers and upper artisans, who, by paying rates, assist to support these parish orphans; for they cannot keep their children to school until they are 15 or 16 years of age: the children of many of them have to work for their own living long before they are this age. It is therefore very desirable that these parish orphans should be disposed of at an earlier age: and the ratepayers should hail with delight any such wise and philanthropic scheme as that of Miss Rye, by which these orphans may be disposed of at an average age of eight years. Miss Rye took away to Canada last year 50 of our parish orphan girls, at an average age of eight years; and thereby she saved the ratepayers of this town something like £5,200 on these 50 orphans alone, taking into account merely the cost of their maintenance and education! What a boon it would be to the ratepayers were all our parish orphans disposed of at the same age! And they could be so disposed of by the same means, viz., emigration. But it is not my intention to go so much into the general question of the disposal of orphans, as into that portion of it which has reference to our Orphan Institutions; I will therefore not pursue further the case of parish orphans, but proceed at once to the subject as it affects our Orphan Institutions.

Now, I have gone carefully into this question in reference to our Orphan Institutions, and I have found that there are in the Orphan Institutions of this town at the present time (even exclusive of those in the Blind Asylum and the Deaf and Dumb Institution), not fewer than 1,100 children, most of whom have lost both parents.—There are in the Protestant

Orphan Asylums, Infants 104, Boys 150, Girls 180; in the Seamen's Orphan Institution, Girls 14, Boys 46; in the Blue Coat Schools, Girls 100, Boys 250; and in the Roman Catholic Girls' Orphanage 86, and in the Boys' 170; making a total of 1,100 orphans being brought up at our Orphan Institutions. And the orphans in these institutions are drawn from a different class of the people from that which supplies the parish orphans, for in some of these institutions it is provided that no orphan shall be admitted who is or has been in a workhouse. And they are even selected from this class, for it is also provided that no orphan shall be admitted unless deprived of *both* parents, or who is over ten years of age, or who is diseased, deformed, or even infirm. And most Dissenter orphans are virtually excluded, for in the Protestant orphan asylums it is provided that all those admitted must be brought up in the principles of the Established Church. Hence a very large proportion of the orphans of the class above paupers are really excluded from these institutions; perhaps three-fourths of the whole. Still, even notwithstanding these restrictions, these institutions are quite full, and are not able to admit nearly all that apply: candidates have to wait their turn, and may have to wait for months, or even years; and, besides that, bring much influence to bear upon the subscribers to gain admission at all before they are over age. This difficulty exists because, under the present arrangement, there is not room enough in these institutions. And this want of room has caused a desire to enlarge these institutions; and certainly something should be done, in order that a greater number may be admitted, and receive the benefit of the early training and education afforded by them; either they should be enlarged, or the orphans should be passed through them more rapidly: for my own part, I am greatly in favour of passing the orphans through them more rapidly; for I am convinced that by so doing much more good

may be done and many more orphans served, and much better served, with the same funds and the same institutions. Let the orphans, in future, be taken out at eight years of age, instead of fifteen or sixteen as they are now, and the present institutions will be nearly large enough to accommodate all the orphans of the town: at all events they will be able to admit more than twice as many as they now do, and confer a much greater benefit on these greater numbers than they now do on the smaller; and the children might be received at an earlier age.

To make provision for 120 orphans each year under the present arrangement, children cannot be taken in at an earlier age than four years, except in the Infant Orphan Asylum: in the Blue Coat Schools they are not received younger than eight years. Receiving them at four under the arrangement I propose, 275 would be provided for each year; or receiving them at three, 220; or at two, 183 would be provided for each year by the same institutions and with the same funds; besides the very great advantage to the orphans themselves of being received at an earlier age. Now all this could be done by inducing them to emigrate: but, I confess, I do not know any other means by which it could be done.

From very careful enquiries, I am convinced that a much greater number of the orphans of the class above paupers are left to be brought up by their own relations than are brought up by these seven institutions; in fact, at least three times the number; for we may safely estimate the number of orphans of the class above paupers in this town at the present time to be nearly 5,000, say 4,400. Now, of these, only 1,100 are being brought up in the orphan institutions. In the three Protestant Asylums they are received, the Infants from three weeks up to seven years, the Boys from seven to ten, the Girls from seven to eleven, and there are in them, 434. In the Seamen's Orphan Asylum they are

received from six to twelve, and there are in it, 60. In the Blue Coat Schools they are received from eight to twelve, and there are in them, 350. In the Roman Catholic Girls' Orphanage they are received from five to ten, and in the Boys' from four to ten, and there are in them, 256: making a total of 1,100, out of the 4,400 in the town. Now, how are the remaining 3,300 being brought up? I think that we may safely assume that they are being allowed simply *to grow up* until they are able to go to work; and that they get very little education; and that they have scarcely any other prospect before them than that of servants, dressmakers, shop-girls, errand-boys, porters, labourers, or common sailors, or at best office-boys or artisans. It is at least quite certain that they cannot be kept at home, or at education, until they are fifteen or sixteen years of age, as are those who are fortunate enough to get into an Orphan Asylum. I say 'fortunate' enough to get into an Orphan Institution, for it is really a piece of good fortune to these 1,100; for they are comfortably housed, and well fed, educated and clothed for nine or ten years of their lives, and after that an outfit and a respectable situation are provided for them; and this, over the heads of, in preference to, and even to the exclusion of the same number of the remaining 3,300, whose friends have borne all the expense and responsibility of bringing them up! During last year, there went out of the Protestant Orphan Girls' Asylum, 14; from the Boys', 18; from the Blue Coat Schools, girls 10, boys 50; and from the Roman Catholic Orphanages, 28; making a total of 120 orphans, passed through these orphan institutions during the year, at an expenditure of £15,000. These were very small results, it must be confessed, for so much money and labour. Surely this shows something wrong in the management! Surely such institutions and such funds ought to produce larger results! £15,000 were expended in one year to provide for

120 out of the 4,400 orphans, whilst 3,300 were left without any assistance at all! Surely such should not be the case; such a sum of money ought to provide for more than 120—ought to be more equally distributed among the 4,400, or at least ought to be extended to a much larger number of them! Are there no means of doing this? Certainly there are:—Let the orphans, as before stated, be disposed of at an average age of eight years, as were those taken out by Miss Rye, and the thing would be done; for 275 would be provided for each year. Under the present arrangement, 1,100 orphans are being brought up in these institutions: of these at least 800 are over eight years of age. By disposing of them at eight years of age, therefore, 800 would be disposed of at once, and would make room for 800 fresh ones. What a boon this would be to many poor families, now struggling to bring up the orphan children of their deceased relatives! By disposing of the orphans at fifteen or sixteen, 120 are admitted and 120 are disposed of each year. By disposing of them at an average age of eight years, 275 would be admitted and 275 disposed of each year; or if admitted one year earlier, 220; or two years earlier, 183; and so on according to the age of admission, by the same institutions and by the same funds.

Now, the *situations* into which the orphans brought up at our orphan institutions are put are, the *girls* almost exclusively that of *domestic servants*; some few go as shop-girls, or to businesses, or trades: the *boys*, most of them, are apprenticed to offices, for *clerks*; some to trades or businesses. Now, there is some difficulty in getting such situations for these children, for these are just the situations for which there are always vastly too many candidates, even without these public orphans: and they are also, in a sanitary point of view, very unsuitable situations for orphans, probably more unsuitable ones could scarcely be selected: it would

indeed be very much better for the health of the orphans were they put to agricultural pursuits, by being induced to emigrate to the Colonies on leaving the institutions.

I. As to the Girls:—The girls are kept in the institutions until they are sixteen years of age, and then they are apprenticed out to mistresses for three years, that is, until they are nineteen years of age; and then they are free, and have to do for themselves.

Now, we all know that there is not only no lack of domestic servants, such as they are, but that there always is and always will be, not only enow, but too many of them, even without these public orphans. To add, then, these public orphan girls to the class of domestic servants, is only to increase the evils of over-supply. The great difficulty as to domestic servants is, not that they are too few, but that they are unfit for the position; that they are untaught, or improperly taught, the duties and requirements of domestic life: and in this respect the girls brought up at our orphan institutions are not a bit better than the rest. And we all also know the very unenviable position the female domestics occupy, and the many temptations and degradations they have to submit to, and the miserable end to which many of them eventually come. This is certainly not a position to be coveted by our public orphan girl, nor one into which she can be put as a favour: it keeps her in a country in which there are already vastly too many of her sex, and condemns her to almost certain celibacy all her life. It would be otherwise were it not for over-supply. A thousand times better would it be for the public orphan girls were they induced, on leaving the institutions, to emigrate to the Colonies, where women are too few and are urgently wanted; and where there would be every prospect of their becoming, not servants but mistresses, not old maids but wives and mothers; and where

the total change of climate and the more free and natural mode of life would conduce to the removal of their natural, inherited, weakness of constitution.

Now, black as is the picture I have drawn of the position of the female domestic, the position of the women connected with work-rooms, shops, business houses and trades is, if possible, even worse; similar remarks are equally applicable; indeed the position of these is simply dreadful: here the evils of over-supply are painfully evident and grievously felt; and have more than once called for the interference of Government. It is as Hood said:

“ Work, work, work !
My labour never flags ;
And what are its wages ? A bed of straw,
A crust of bread—and rags.

Stitch—stitch—stitch,
In poverty, hunger, and dirt,
Sewing at once, with a double thread,
A shroud as well as a shirt.”

II. As to the Boys:—Great difficulty is experienced in finding situations for the boys brought up at our orphan asylums, so much so that the committee have continually to appeal for assistance in this matter: in their report for last year, they say: “ The difficulty of finding suitable situations for the boys is still encountered, and any assistance in this matter would be much esteemed by the committee, as enabling them, by the creation of vacancies, to admit children now on the books more rapidly than it is at present in their power to do.” This is to be regretted; but it is certainly not to be wondered at, when we take into consideration the circumstances of the case; for of all situations desirable clerkships offer the fewest openings for orphan boys, because there is always a long list of other candidates waiting for the vacancies

as they occur. "Here, in Liverpool," says the writer of *Porcupine*, "ninety-nine parents out of the hundred have but one idea in respect of embarking their lads in life, and that is a high stool in a merchant's office." There are in this town about 20,000 clerks, and of these about 5,500 are apprentices; and these apprentices have to serve at least five years; the vacancies, therefore, cannot exceed about 1,100 a year: now there are many more than 1,100 candidates for them, even without these public orphans; there are indeed nearly 2,200 candidates; and some of these are of course much more entitled to them than others are, and some have a much better chance of getting them than others have: in these respects these candidates may be divided into six different classes, viz., — 1, And most likely to get the best situations, the sons of the merchants themselves: 2, And next likely to get the best, the sons of the present clerks: 3, The present existing office-boys, and many of the unemployed elder clerks, who are driven to be willing to accept boys' situations rather than to starve: 4, And most entitled to at least the second or third class of these situations, the destitute orphan boys brought up by their own relations: 5, And next entitled, the children of the small shopkeepers and respectable artisans: and 6, and least entitled, these orphans brought up at the public expense.

Now there are, as I have before stated, 120 children passed through our orphan institutions every year; of these 87 are boys, and, as before said, the majority of the boys are candidates for the clerkships, say these amount to about 80; then we may safely estimate that there are 100 sons of merchants; 400 eligible office-boys; 400 sons of clerks; 300 private orphans; and at least 900 children of small shopkeepers and respectable artisans; making a total of nearly 2,200 competitors for 1,100 situations! Can we then wonder at the great difficulty there is in obtaining these situations?

And do we not see the great mistake of bringing up public orphan boys with the expectation of becoming clerks? Can we not see that it would be infinitely better for them, and for all parties concerned, to induce them to emigrate to the Colonies on leaving the institutions?

Then the remuneration of apprentice clerks is so miserably small, that most of them have to be kept almost entirely the whole period of their apprenticeship. Of course the sons of the merchants themselves will take these situations for the mere advantage of learning the routine of office, to prepare them to take their fathers' places when they retire; and the office-boys will of course accept the position for even their wages: and I have been credibly informed that in the offices of some of our merchant princes, there are from five to ten apprentices, who merely receive a sum varying from £25 to £100 at the end of their apprenticeship, and are then turned out to make room for others at the same remuneration. Such remuneration is surely not what we would desire for the boys of our orphan institutions, from the fifteenth to the twentieth year of their age! And to contend that these orphans, through the influence of the subscribers, are better treated than I here indicate, would only aggravate the evil of which I complain; for such favoritism would be another injustice to the other candidates.

Then the position of a clerk after he has served his apprenticeship is certainly not, in the majority of cases, to be envied. Speaking of the lads put to clerkships, the editor of *Porcupine* observes: "Assuredly they do not prosper: the great bulk of them are lost in hopeless obscurity." Of more than half of the clerks of this town the salary is only £100, or under; so that an apprentice must possess very good qualities and abilities to entitle him to expect more than £100 a year for many of the first years of his life. A writer in the *Daily Mercury*, the other day, said: "Our clerks,

now-a-days, consider themselves very lucky if they fall in with a situation at £60 per annum." Only a short time ago I read of a man, of some education, who had most of the work and all the responsibility of an office, and kept the situation for four years, for the miserable pittance of 7s. a-week! This would not be the case, however, were it not for the immense over-supply; for it is not because the clerks are not worth more, but because if one will not take the situation for this miserable pittance another will. Very few indeed of our clerks can afford to bring up a family at all respectably, and a very large proportion of them dare not even think of getting married, because it would be simply folly to attempt to maintain a wife and family on their miserable earnings. Hence they are driven to contribute to the maintenance of one of the crying evils of our day, viz. Prostitution; and thus also run the risk of disease and disgrace. Natural instinct, at times uncontrollable, drives them to commit this sin: and this is frequently the beginning of their fall and ruin; for they, becoming disgusted with themselves, try to drown their remorse with drink; and, shunning the society of the moral and virtuous, they seek that of the immoral and depraved; they neglect their duty and lose their situations; and thus, step by step, they are driven to ruin.

Then, again, even with clerks of good character, there is immense difficulty in getting a re-engagement when once a clerk gets out of employment. Of the 20,000 clerks in this town, I am credibly informed there are always from 300 to 400 out of employment, some of them for many months at a time. Now what can they do for a living during this time? Certainly they cannot live on what they have accumulated from their previous earnings. And are not many of them thus forced into the class of criminals by mere want? To avoid ruin, many of them have to take up some other occupation, or to emigrate at last, after having wasted their

youth in an occupation that will not only be of no use to them, but will, more than any other, have unfitted them for that employment which, as emigrants, they must necessarily adopt. And are not many of them tempted to embezzle the means for emigrating? Certainly it would have been much better for these young men had they emigrated in their youth, for by this age they would be independent and free, if not wealthy. Why should we thrust poor helpless public orphans into this struggling, starving, over-crowded class? It is certainly no great kindness to them to do so; indeed if we would render them a service, we shall do all we can to keep them out of clerkships. It would be very much better to induce them to emigrate to the Colonies, where there is plenty of room and abundance of work, and not only no risk of starvation but every prospect of plenty and prosperity, and every inducement for them to marry and to live morally, and rejoice in the responsibility of a family of children.

Of course there are some very comfortable, lucrative and desirable clerkships; but there are also many fit and worthy candidates waiting for them, and to most apprentices they are rather things to be hoped for than expected.

Now these remarks I have made with reference to clerkships, gloomy as they are, are almost equally applicable to businesses and trades in this country. The facts may be shown to be similar in each case, and that a similar scarcity of employment and surplus of candidates exist in each, and are productive of similar evils. Apprentices to trades in this country have in many cases to work for a term of years and be kept all the time by their friends; and even after they are out of their time they cannot obtain a situation that will keep them; so that many of them are compelled to emigrate even after serving an apprenticeship. And here comes a great evil for this country, for those who do emigrate are, generally speaking, the most skilled, robust and enterprising of them.

This country therefore loses by emigration a vast number of its most promising adult artisan and labouring male population. I have not been able to get the account for the whole year, 1869, but during the last quarter at least 31,190 such emigrants left this country; 16,762 of these were English, 10,305 were Irish, and 4,123 were Scotch; taking these numbers as the average, the number for the year would be 124,000, say 120,000; in 1868 the number was 138,187; and in 1867 it was 156,982, so that even 124,000 would be under the mark rather than over. And these emigrants did not much benefit our Colonies, for five-sixths of them went to the United States.

In a country like England, and especially a town like Liverpool, emigration is a necessity; for there is not, and there cannot be, remunerative or desirable employment for the whole population; some must emigrate. The questions, therefore, arise—Who shall emigrate? and Whither shall they go? My answers to these questions are:—Women and Orphans; and to our own Colonies. Our present system of emigration is certainly very faulty, for by it we lose those we ought to retain, and retain those we could well spare; and they go especially to the United States, instead of to our own Colonies. Now we have a surplus of women, and this surplus can neither be married nor honourably employed; and our Colonies have a paucity of women, and the men can neither get wives nor get women to do women's work; girls, and even adult women, should therefore be encouraged to emigrate; and nearly *all orphans* should emigrate, for they have fewer family ties than others; and especially the orphans brought up by public charity; PUBLIC ORPHANS, therefore, are of all persons the ones who should emigrate; and emigration should be suggested to them, and its advantages to themselves pointed out to them. *Indeed it should be one of the rules of all Orphan Institutions, that all those, both boys and*

girls, who are educated and brought up by their funds will be expected to emigrate eventually. This should be an absolute condition of their admission. These institutions would then serve two very important and useful purposes which they now do not serve, viz., they would supply needed population to our Colonies, instead of aiding to supply it to the United States, and they would assist to preserve to the Mother Country much of the skill, enterprise, bone and muscle that are now forced away; whilst they would be prevented from assisting, as they now do, to increase the evils of over-supply in our labour markets. Some persons may object to such a rule being adopted by our orphan institutions, and may even think such would be unjust; but surely there would be nothing unjust in benefactors making any reasonable condition as to the distribution of their charity, especially if such condition would be to the advantage, not only of the recipients but of the country and all concerned! Such a rule would be no injustice, but wisdom and foresight; and it would apply, not to those already in these institutions, but only to those who would enter under this condition.

That emigration would be an absolute kindness and an immense advantage to the public orphans themselves will, I think, appear evident on reflection; for, besides the facts before mentioned, and which I need not here repeat, we must consider their inherited constitutional weakness; and their prospects in this country. As to their constitution: being born of weakly and sickly parents, who had not stamina enough to keep them alive to bring up their children, many of them are consumptive from birth, or have inherited some other constitutional taint tending to carry them to an early grave; for this a total change of climate is one of the best curative means, and this they would thus get free of expense to their friends. Then as to their prospects, as clerks: a closely-confined, ill-ventilated, unhealthy and perhaps damp

office, with long hours and short pay ; and, as apprentices to businesses and trades, having neither money nor friends to set them up in business, they must spend their lives as assistants ; whilst their small stature and unprepossessing appearance, and their want of vigorous health, would exclude them from the best of these assistancies ; they would thus be condemned to a poor, miserable and degraded position all their lives. If they live, they perhaps marry, and raise up, in poverty, offspring little better than themselves ; and they themselves drag out a miserable existence, half on duty and half on the sick list of their clubs ; with poverty, sickness and an early death constantly staring them in the face. Emigration in youth would be to them an immense boon, both physically and socially ; it would give them the invigorating influence of a total and suitable change of climate, and it would change their sickly, degrading and unremunerative occupation to a healthy, honourable and lucrative one ; and their prospects from a miserable starvation pittance to comfort, competence and independence. I need say no more, I think, or I would enlarge on the vast resources of our Colonies, their extent of territory and their productiveness, which only wait for occupation and development.

Then, that early emigration of the public orphans would be an immense advantage to the Mother Country will be admitted by all. As before stated, some must emigrate ; our population is too numerous for our lower middle and our labouring classes to live in comfort and prosperity ; our natural increase is too rapid for the resources of our country, and the evils of this fall very heavily on our labouring population. Voluntary emigration of our surplus population takes place at the rate of about 120,000 to 130,000 annually ; and these are drawn principally from the adult male population, and particularly from the healthy, strong, vigorous and skilled artisans, who scrape together all they have and take it away out of the

country. Thus those emigrate that we can *least* afford to spare, and those are left that we could *best* afford to spare; and those who do emigrate remain in this country whilst they are comparatively useless and have to be provided for, and as soon as they have become useful and able to provide for themselves they go away. Men, of whom we have the fewer, go away and leave the women, of whom we have always an excess; the strong and well-developed, vigorous and healthy, emigrate, and leave us the weak, puny and unhealthy; the hopeful and enterprising go away, and leave us the shiftless and dependent; thus is brought about a degeneration of our race, both physically and mentally, in our own country, and an improvement of it in the United States.

Now much might be done to prevent these undesirable results, by the emigration of our public orphans. There are in Liverpool, under the present arrangement and including the Parish Orphans, about 300 public orphans to be disposed of every year; and taking the same proportion for the whole kingdom there would be 17,300; but under the arrangement I propose there would be in Liverpool alone 775; and taking this proportion for the whole kingdom there would be 42,900 public orphans to be induced to emigrate every year. Thus, then, by inducing our public orphans to emigrate, we should preserve to our country considerably more than one-third of the intellect, enterprise, bone, muscle, skill and wealth, that under the present arrangement we are continually furnishing to the United States; and would relieve ourselves of something like 42,900 persons per annum that we can very well afford to spare; and would, as compared with the present plan, save about £120 on each orphan brought up by public money; so that in future each public orphan would cost us about £120 less than he does at present; and this would be an immense saving to the country, seeing that we have not fewer than 369,000 public orphans in the country; and it

would greatly assist to diminish our taxes ; to raise the position of our clerks, assistants and artisans ; and to improve the physique and intelligence of our population.

And again, that early emigration of our public orphans would be an immense advantage to our Colonies, it needs no argument to show. Our Colonies are greatly in need of increase of population by immigration ; because their own natural increase is not sufficiently rapid to take advantage of their immense resources. They require especially women ; and youths, of both sexes, who have not settled in one particular employment, but who can be easily adapted to the necessities and resources of the country ; not delicate clerks nor skilled artisans, but servants and helpers, young and tractable. And just such an addition to their population the early emigration of our public orphans would supply ; and of such we could supply them about 42,900 per annum ; which, with the usual proportion of the adult emigrants, would make 64,900 per annum to our own Colonies, instead of only 22,000 as is done at present. This would, of course, be an immense help to our Colonies, and would greatly assist to develop their resources, and to increase their productions, and their imports and exports.

So much for the necessity and wisdom of inducing our public orphans to emigrate. What about the possibility, practicability and means ? for, after all, these are the main questions.

Fortunately, I need not detain the Society long on these points, because they have all been already not only indicated but demonstrated by the benevolent Miss Rye, who last year took out to Canada 70 parish orphan girls, and there provided for them to the complete satisfaction of all parties concerned ; thus showing, not only the possibility, practicability and means, but also the way to success. As to the emigration of parish orphans, Government has already legislated : for by the

4 and 5 Act of William IV. Parishes in England and Wales are empowered to raise funds by a yearly rate for this purpose ; and the 11 and 12 Victoria empowers guardians to provide funds for this purpose out of the ordinary Poor's Rate ; and by the 12 and 13 Victoria they are empowered to expend a sum not exceeding £10 for each person, without calling a previous vestry meeting ; and the 13 and 14 Victoria, making special provision for the emigration of orphan children, provides that they shall not be emigrated without at least their own free consent. The powers thus afforded have not been made much use of, because hitherto there has been no proper organisation for the purpose, especially for the reception and disposal of the orphans after they have arrived in the Colony. This want has, however, now been supplied, by an establishment called "Our Western Home, Niagara, Canada West;" and 70 orphan girls have already been passed through it to comfortable situations in Canada ; and we need only continue the work so successfully begun by Miss Rye, following in her footsteps, or furthering and assisting her enterprise. Miss Rye proceeded thus : She went to our Industrial Schools, and there asked the orphan girls if they would go with her to Canada : the responses were so generally in the affirmative that she had more volunteers than she could accept, so she selected 50 of those whose relatives consented ; and, along with some 20 others from other towns, she took them out in the *Hibernia*. Their passage money and other expenses were soon provided, partly by private benevolence. She provided every comfort for them on the voyage, and on their arrival in Canada she took them to the "Home," and afterwards into the interior, where such immigrants are much needed for servants, and where they were eagerly seized upon by respectable land-owners ; so that within a couple of months she had found places for nearly the whole number. So successful has been

her mission, that we may soon look for her return; and by that time I hope we shall be prepared to offer her a considerable number more, with less hesitation and more confidence, and with more liberal assistance. The following paragraph I cut from the *Lancet*, of the 9th of April, 1870 :—

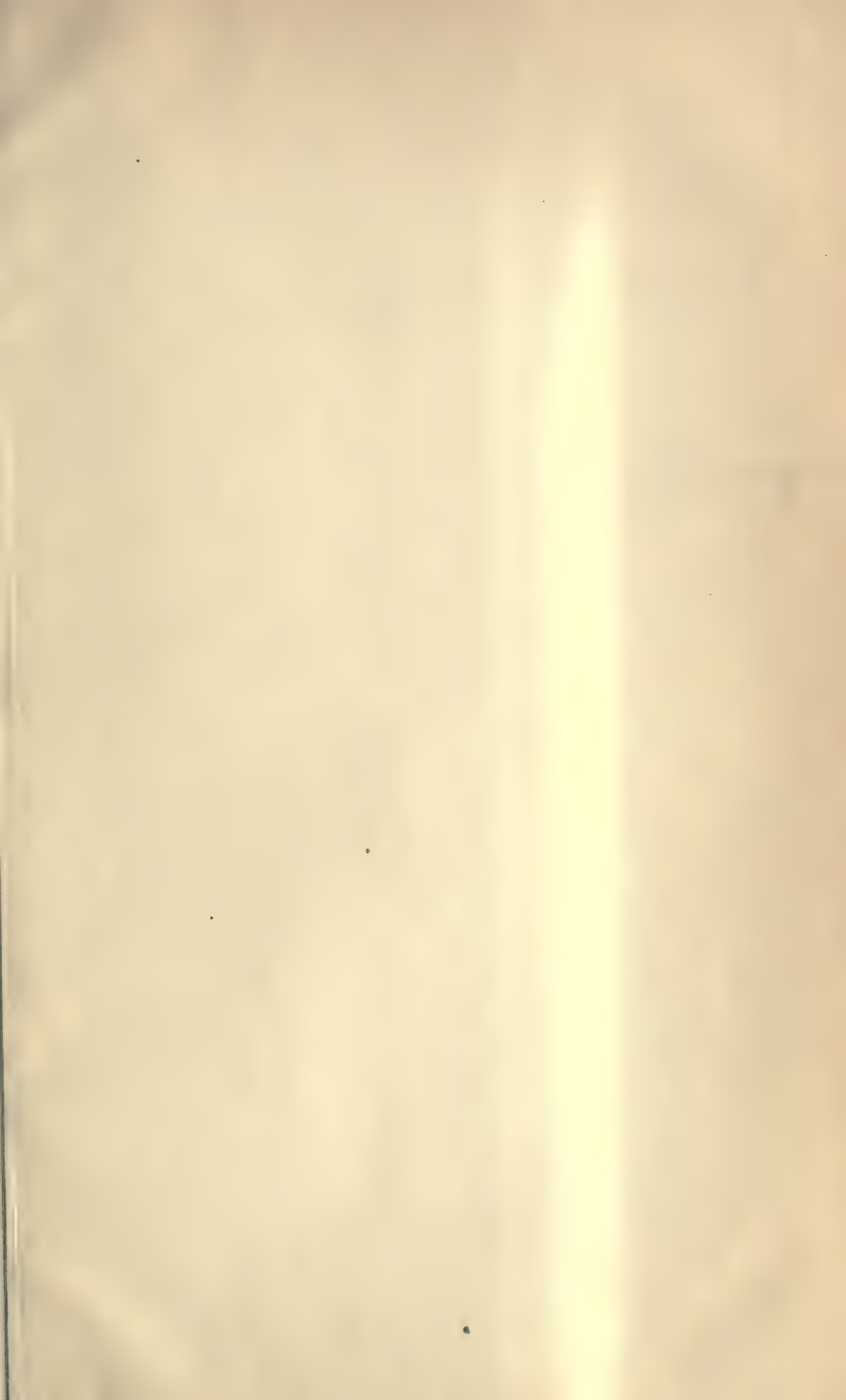
“GUTTER-CHILDREN.

“ENGLAND’S misfortune is Canada’s opportunity. Such is the lesson taught us by Miss Rye’s philanthropic and useful labours. Of the seventy little orphan girls who under her auspices have found in the far West the home denied to them in the mother-land, her most sanguine expectations (she tells the world through the *Times*) have been more than fulfilled. Their health has been wonderfully good—both doctor and dispenser being themselves dispensed with. They have proved affectionate, obedient, and grateful, and all, especially those from the Kirkdale Industrial School at Liverpool, have turned out capital workers, creditable at once to their teachers and themselves. From “Our Western Home, Niagara, Canada West,” Miss Rye appeals to the philanthropically minded of the British public for another party of little emigrants, to be ready for her on her arrival here in April, so as to accompany her on her return at the end of May. Upwards of a hundred homes are waiting for them; and their protectors here may be assured that, as on the voyage out, so on their arrival, they will receive every attention that kind hearts and able hands can bestow. It were idle to calculate the boon conferred on England by the rescue of these orphans, and their entrance on a useful and virtuous life, away from the moral and sanitary risks of our great cities; while to Canada, underpopulated as she is, the acquisition of so many young, active, and intelligent females is a bit of good fortune which she cannot fail to appreciate. Young Canadians of the rougher sex own themselves the most immediate gainers by the English exodus, and, doubtless, make pleasant reference to their future helpmates “coming through the Rye.”

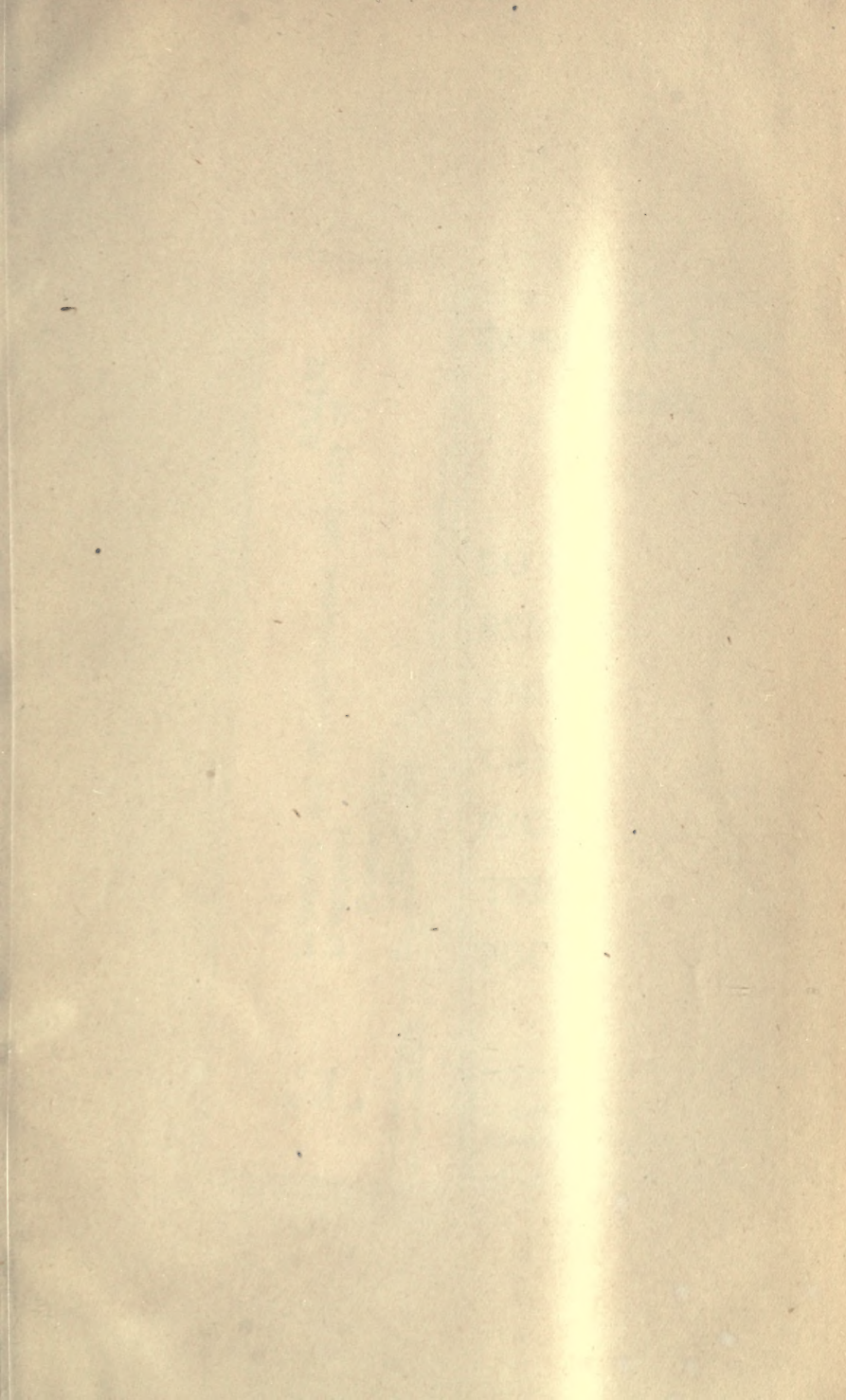
This inaugurates a new era in our emigration, and one likely to prove beneficial to all parties concerned. Of course young people are the most suitable for emigrants; and it appears from experience that they should be taken out as children, for they are then much more acceptable to the colonists, and much more likely to do well; that they are much more likely to do well if taken out about eight years of age than fifteen years and upwards. And I am led to believe

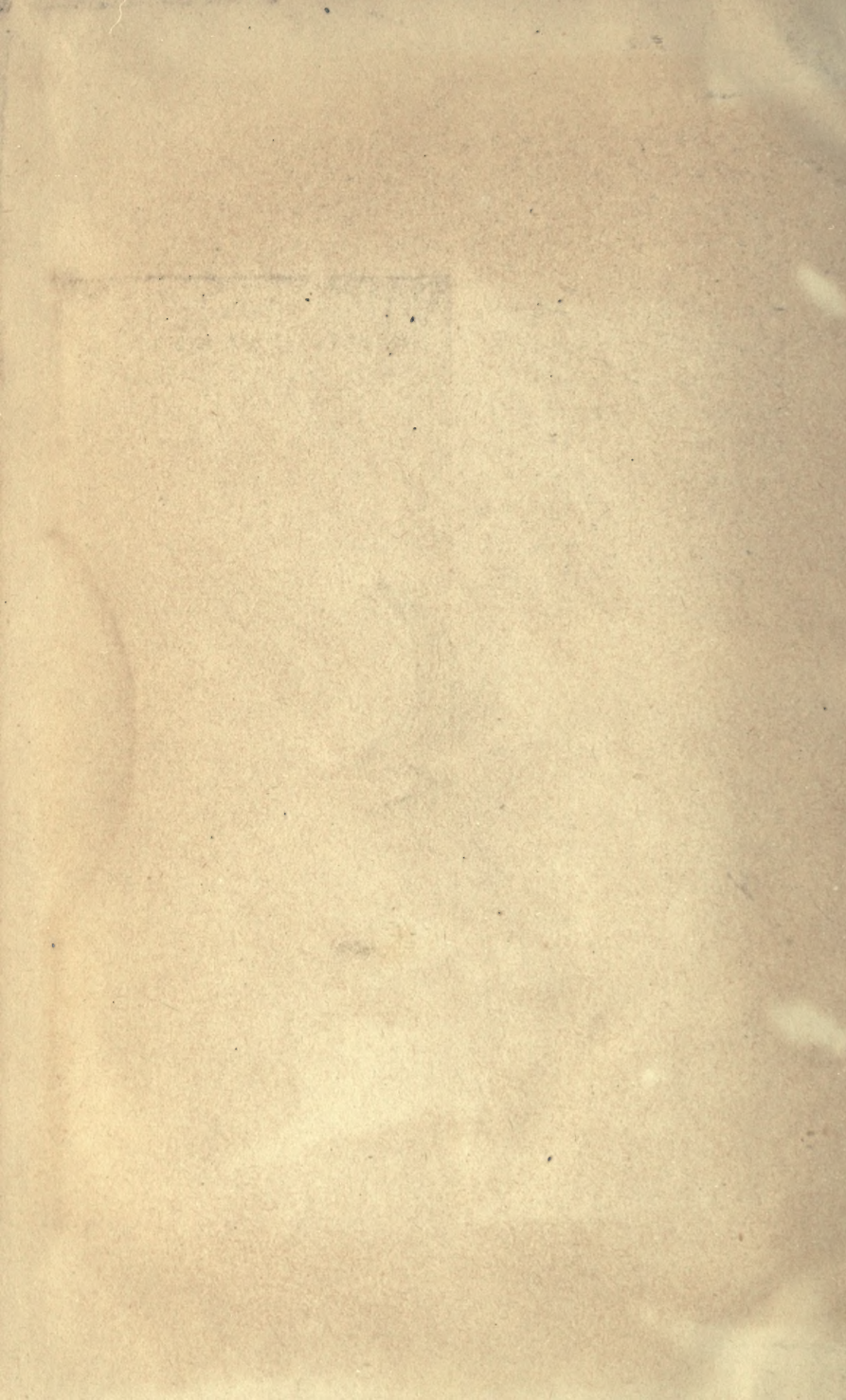
that, with such arrangement as that of Miss Rye, the Colonial Government would gladly bear the whole expense of emigrating any number of eligible orphan children of about eight years of age. At the late meeting of the Emigration League in this town, one speaker, Mr. E. Jenkins, Barrister, London, said : “ They had seen the representatives of New Zealand, of some of the Australian colonies, and of Canada ; and from one and all they get the same answer, viz., that they were anxious to receive the people of this country, if sent on proper conditions ; . . . and in some cases the Colonial Governments would guarantee that the whole of the money expended in that way should be returned to the Home Government.” And Sir George Grey said : “ Nearly all the emigrants who had proceeded to Australia and New Zealand, and vast numbers of those who had gone to the Cape of Good Hope, were removed from Great Britain by free passages being granted to them by Colonial Governments ; . . . and that every one of our Colonies would join the Government with the greatest readiness in a matter of this kind, and would receive the emigrants from the moment they landed, and watch over them until they were placed upon lands suited for their purposes, and aid them in every possible way.” But even independent of any Colonial assistance whatever, the mother country would be a great gainer by sending out the public orphans at about eight years of age ; the poor’s rates might be reduced, and the ratepayers relieved wonderfully, for though each parish orphan should cost £20 to send out, we should save at least £100 on each one. And as to the orphans brought up at the institutions, I am sure ample funds would be forthcoming immediately the scheme was set at work. We would thus provide for at least 775 public orphans each year ; doing the best thing possible for them, for the mother-country, and for the colonies ; and exercising true philanthropy and true social and political economy.

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